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USER GUIDE

UGD035-0311

Carousel Plus Dryer

W Series Models 600 through 5000 with DC-1 Controls

Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date:

Manual Number: UGD035-0311

Serial Number(s):

Model Number(s):

See Screens 3 and 4 for Software Version

*Display Firmware Version:

*Control Firmware Version:

* **NOTE:** Displayed upon initialization, during power up, or on a data tag inside the door.

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Purpose of the User Guide

This User Guide describes the Conair Carousel Plus W Series Dryer and explains step-by-step how to install, operate, maintain, and repair this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

How the Guide is Organized

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.

Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.

1 Numbers indicate tasks or steps to be performed by the user.

◆ A diamond indicates the equipment's response to an action performed by the user.

❒ An open box marks items in a checklist.

- A circle marks items in a list.

Indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.

Indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

Using the Carousel Plus W Series as a Central Dryer

The Conair Carousel Plus W600-5000 Series Dryers are factory configured to be used as central dryers only. Therefore, this manual incorporates the information necessary to use these dryers for central drying applications.

Your Responsibility as a User

You must be familiar with all safety procedures concerning installation, operation and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this User Guide, paying particular attention to hazard warnings, appendices and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

ATTENTION:
Read this so no one gets hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.

⚠ WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.

This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

⚠ WARNING: Voltage hazard

This equipment is powered by three-phase alternating current, as specified on the machine serial tag and data plate.

A properly sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

(continued)

ATTENTION:

Read this so no one gets hurt (continued)

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.

CAUTION: Hot Surfaces.

Always protect yourself from hot surfaces inside the dryer and hopper. Also exercise caution around exterior surfaces that may become hot during use. These include the hopper door frame, the exterior of an uninsulated hopper, the return air hose and the dryer's process filter housing and moisture exhaust outlet.

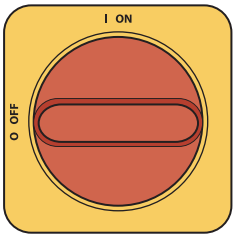
WARNING: Do not place aerosol, compressed gas or flammable materials on or near this equipment.

The hot temperatures associated with the drying process may cause aerosols or other flammable materials placed on the dryer or hopper to explode.

How to Use the Lockout Device

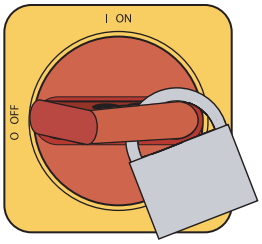
CAUTION: Before performing maintenance or repairs on this product, you should disconnect and lockout electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

Lockout is the preferred method of isolating machines or equipment from energy sources. Your Conair product is equipped with the lockout device pictured below. To use the lockout device:



1 **Stop or turn off the equipment.**

2 **Isolate the equipment from the electric power.** Turn the rotary disconnect switch to the OFF, or "O" position.

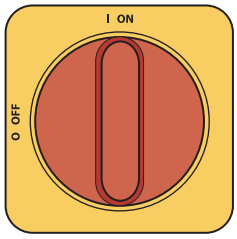


3 **Secure the device with an assigned lock or tag.** Insert a lock or tag in the holes to prevent movement.

4 **The equipment is now locked out.**

WARNING: Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed, and all safety guards reinstalled.

To restore power to the dryer, turn the rotary disconnect back to the ON position:



1 **Remove the lock or tag.**

2 **Turn the rotary disconnect switch to the ON or "I" position.**

SECTION
2

Description

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What is the Carousel Plus W Series Dryer?

The Carousel Plus W Series dehumidifying dryer produces low-dewpoint air that removes moisture from hygroscopic plastics. The dryer pulls moist air from a drying hopper and circulates it through a dehumidifying desiccant wheel. The dryer then circulates the air through the material in the hopper.

The dryer's closed-loop design ensures a continuous supply of dehumidified air while preventing contamination from moisture in the plant.

Typical Applications

1 Dryer on the floor, single hopper (with HTC Hopper Temperature Control package) on a floor stand.

2 Dryer on the floor, multiple hoppers in central configuration (ResinWorks) with separate heat source for each hopper.

✎ **NOTE:** The W600 - 5000 provides no heat to the process air. A separate heat source is required at the hopper(s) inlet to heat the air to the desired drying temperature.

The Carousel Plus W Series Dryer can be used successfully in applications that require:

- A contamination-free drying environment.
- A constant flow of dehumidified air.

(continued)

Typical Applications (continued)

Model	Drying Temperature Range
Low temperature (with precooler)*	100° - 150°F {38° - 66°C}
Standard	150° - 240°F {66° - 116°C}
High heat (with aftercooler/intercooler)*	150° - 375°F {66° - 191°C}
Low-high (with aftercooler/intercooler & precooler)*	100° - 375°F {38° - 191°C}

* See page 3-17, 3-18 and Appendix B

- Throughput rates of 600 to 5000 lbs {271 to 454 kg} per hour (some materials can be ran at a higher rate).

- Dewpoints of -40°F {-40°C}.

Use the aftercooler/intercooler when:
- You are drying at temperatures over 240°F {116°C}.
- Throughput rates are less than 50% of the dryer's rated capacity.
- You are pre-drying material at temperatures over 150°F {66°C}
- The return air is 120°F {49°C} or above.

✎ **NOTE:** The aftercooler/intercooler reduces the temperature of air returning from the drying hopper, improving the efficiency of the desiccant.

Dryer Options
- Dewpoint monitor/dewpoint control
- Audible and visual alarm

✎ **NOTE:** Temperature setback is only available in conjunction with the Hopper Temperature Controller (HTC) or ResinWorks systems.

✎ **NOTE:** Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1600-5000 uses an intercooler located after the process blower.

How It Works

The Process (Drying) Cycle (W600 - 1000)

Process air from the hopper is pulled into the dryer, through the process filter and then into the process blower inlet. Air exits the process blower and then enters the aftercooler, then passes through the desiccant wheel, where moisture is removed. The air exits the dryer and passes through the precooler (if installed), then into the process heat source (HTC or CGT Gas Unit). After the air exits the process heat source it then goes into the hopper inlet, then to the spreader cone, which evenly distributes the air through the material.

The Process (Drying) Cycle (W1600 - 5000)

Process air from the hopper is pulled into the dryer, through the process filter and then into the process blower inlet. Air exits the process blower and then enters the intercooler, then passes through the desiccant wheel, where moisture is removed. The air exits the dryer and passes through the precooler (if installed), then into the process heat source (HTC or CGT Gas Unit). After the air exits the process heat source it then goes into the hopper inlet through internal piping, then to the spreader cone, which evenly distributes the air through the material.

The Regeneration Cycle

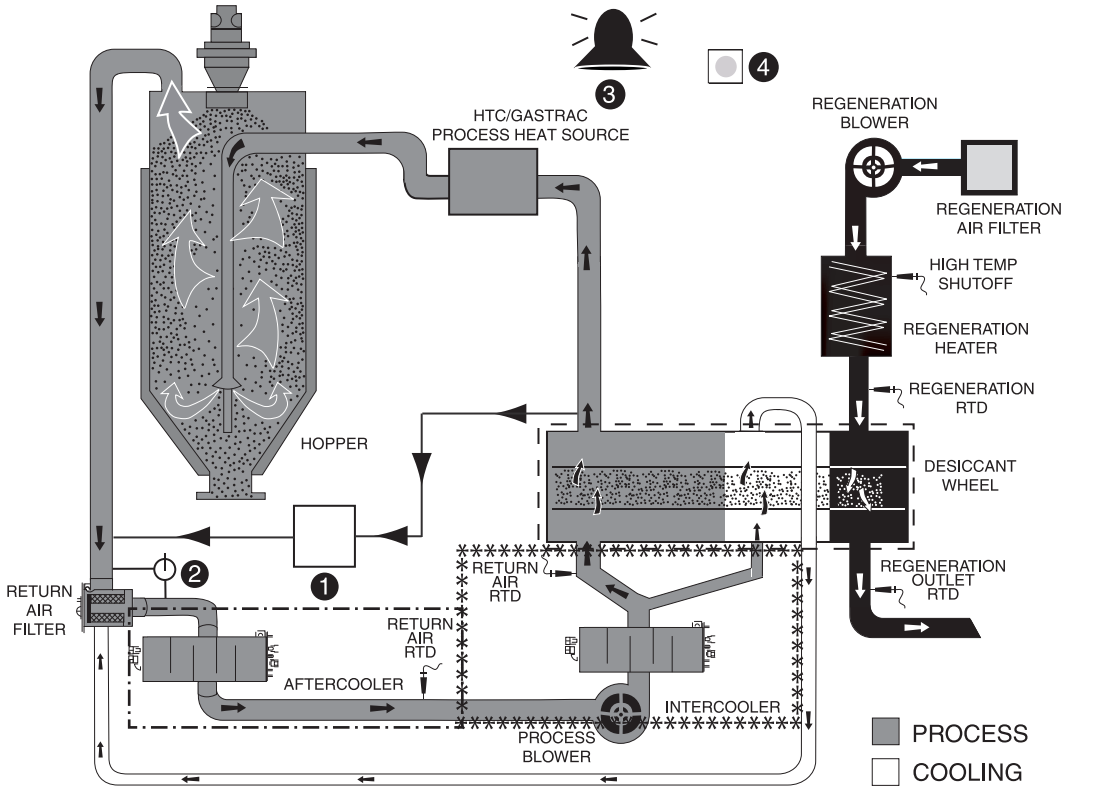
The regeneration blower pulls air through the regeneration filter into the dryer's regeneration heater. The air is heated to 350°F {177°C} before it is pushed into the "wet" section of the desiccant wheel. The hot air purges moisture from the desiccant. The moist air is blown out the moisture exhaust at the top of the dryer.

The Cooling Cycle (All models except W2400 and 5000)

Regenerated desiccant must be cooled before it rotates back into the process cycle. The process blower pushes the process air through the desiccant wheel. A small amount of the process air is diverted through a small section of the desiccant wheel to cool the air. The cooling air then returns back to the process air stream at the start of the process cycle.

How It Works (continued)

(W600 - 1600 and 3200)



CENTRAL DRYER OPTIONS

1 DEWPOINT MONITOR / CONTROL*
2 PROCESS FILTER STATUS
3 ALARM BELL†
4 ALARM LIGHT†

*Standard on DC-2 controls
†Standard on some DC-1 models

W-series 600-1000 aftercooler location.

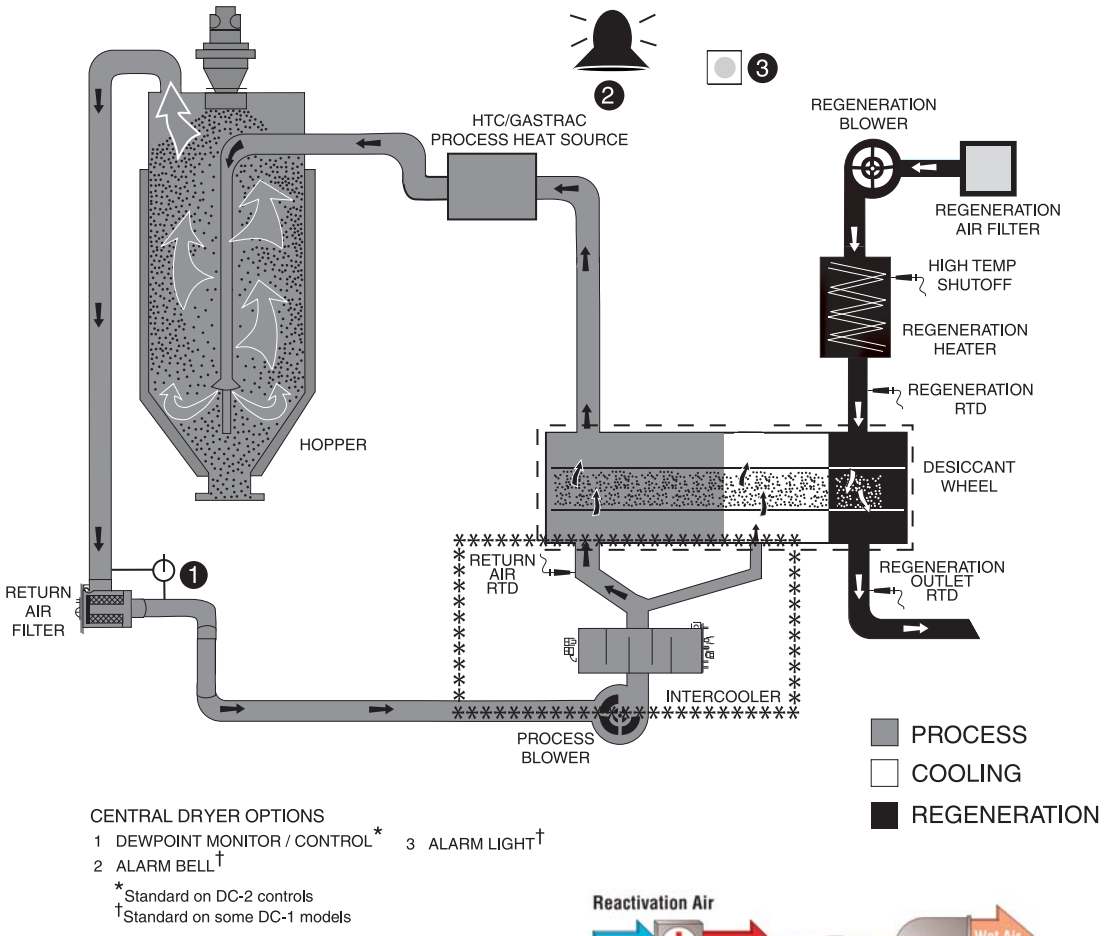
W-series 1600-5000 intercooler location only.

NOTE: Earlier W1600-5000 dryers will have their intercoolers in the W600-1000 location.

NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1600-5000 dryers use an intercooler located after the process blower.

How It Works (continued)

(W2400 and 5000)



CENTRAL DRYER OPTIONS

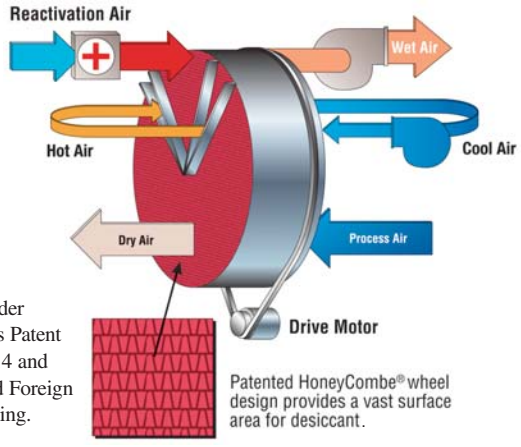
1 DEWPOINT MONITOR / CONTROL*
2 ALARM BELL†
3 ALARM LIGHT†

*Standard on DC-2 controls
†Standard on some DC-1 models

Power Purge

W 2400 and 5000 models have a Power Purge (cooling fan) feature integral to the desiccant wheel assembly.

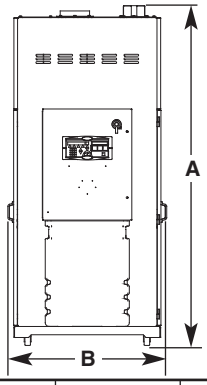
NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1600-5000 dryers use an intercooler located after the process blower.

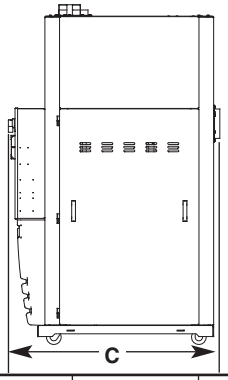


Protected under United States Patent No. 7,101,414 and other US and Foreign Patents Pending.

Patented HoneyCombe® wheel design provides a vast surface area for desiccant.

Specifications: Carousel Plus W Series Dehumidifying Dryers





MODELS	W600*	W800*	W1000*	W1600*††	W2400*††	W3200*††	W5000*††
Performance characteristics (with full hopper)							
Drying temperature	All models 100 - 375°F {38 - 191°C} with options						
Dewpoint	All models -40°F {-40°C}						
Dimensions inches {cm}							
A - Height	92.6 {235.2}			95.5 {242.6}		102.8 {261.1}	
B - Width	43.3 {109.9}			48.3 {122.7}		48.9 {124.2}	
C - Depth	57.6 {146.3}			86.2 {218.9}		112.0 {284.5}	
Outlet/inlet hose diameter	8 {20.3}			12 {30.5}		12 {30.5}	
Approximate weight lbs {kg}							
Installed	1300 {590}	1300 {590}	1400 {636}	1600 {726}	1600 {726}	2000 {907}	2000 {907}
Shipping	1495 {678}	1515 {687}	1515 {687}	2100 {953}	2620 {1188}	3385 {1535}	3385 {1535}
Voltage - Full load amps							
400 V/3 phase/50 Hz†	37.2	37.2	37.5	64.7	73.7	122.3	128.0
460 V/3 phase/60 Hz	32.0	32.0	32.2	56.3	63.1	106.6	111.0
575 V/3 phase/60 Hz	25.6	25.6	25.7	45.0	50.5	85.3	89.1
Water requirements {for aftercooler/intercooler or optional precooler}§							
Recommended temperature**	45° - 85°F {7- 29}						
Water flow gal./min. {liters/min.}	6-25 {22.7-94.6}		12-40 {45.4-151.4}			15-50 {56.8-189.3}	
Water connections NPT	1 1/2 in. NPT						

SPECIFICATION NOTES:

* Dryers W600-W5000 are central dryers and do not have process heaters. Hopper Temperature Controllers (HTC's) or ResinWorks systems are used at the hopper for heating the process air. See the Hopper Temperature Controller (HTC) specification sheet for additional information.

† Dryers running at 50 Hz will have 17% less airflow, and a 17% reduction in material throughput.

‡ Total kW listed at a regeneration temperature of 350°F {177°C}.

§ When drying below 150 °F {66°C} a precooler is required. When drying above 180°F {82°C} an aftercooler/intercooler and insulated drying hose is required.

** Temperatures above or below the recommended levels may affect dryer performance. Tower, chiller or municipal water sources can be used.

†† Models W1600-5000 do not have casters.

Specifications may change without notice. Consult a Conair representative for the most current information.

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Carousel Plus W Series Dehumidifying Dryer Options

- **Volatile trap** (only in conjunction with aftercooler/intercooler) - The volatile trap is recommended if drying materials that produce volitales that condense into a waxy or oily residue and/or if the material contains excessive fines.

- **Precooler** - The precooler reduces the temperature of air after the desiccant wheel and before the process heater, which enables the dryer to control temperatures at low setpoints, (100º - 150ºF {38º - 66ºC})

- **Filter check** - The filter check sensor will activate a passive alarm when the process filter is clogged or needs to be replaced.

NOTE: Temperature setback is only available in conjunction with the Hopper Temperature Controller (HTC) or the ResinWorks system.

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Unpacking the Boxes

The Carousel Plus W Series Dryer comes in one to four boxes, depending on the model and options ordered. The box(es) could include (depending on the options selected):

- Carousel Plus W Series Dryer
- Delivery air hose
- Return air hose
- User Guide

1. **Carefully remove the dryer and components** from their shipping container(s). Note that the dryer is secured to its shipping container with metal bands that pass through the bottom of the dryer frame.

2. **Unbolt any additional items secured to the shipping pallet,** such as the regeneration exhaust cover and return air adapter. (Carousel Plus W Series 1600-2400 Dryers will have a dry air delivery adapter. Carousel Plus W Series 3200-5000 Dryers will have a dry air delivery adapter and an overhead process air duct.)

3. **Remove all packing material,** protective paper, tape, and plastic.

4. **Cut and remove the desiccant wheel tie** securing the wheel assembly. (W600-1000)

5. **Carefully inspect all components** to make sure no damage occurred during shipping, and that you have all the necessary hardware.

Unpacking the Boxes (continued)

6 **Take a moment to record serial numbers** and electrical power specifications in the blanks provided on the back of the User Guide's title page. The information will be helpful if you ever need service or parts.

7 **You are now ready to begin installation.**
Follow the preparation steps on the next page, then choose one of the two mounting options:

- Dryer on the floor, single hopper (with HTC Hopper Temperature Control package) on a floor stand.
- Dryer on the floor, multiple hoppers in central configuration (ResinWorks) with separate heat source for each hopper.

✎ **NOTE:** The W600 - 5000 provides no heat to the process air. A separate heat source is required at the hopper(s) inlet to heat the air to the desired drying temperature.

Preparing for Installation

The Carousel Plus W Series Dryer is easy to install if you plan the location and prepare the mounting area properly.

1 **Make sure the mounting area provides:**

- ❒ **A grounded power source supplying the voltage and correct current** for your dryer model. Check the dryer's serial tag (on the control box) for the correct amps, voltage, phase, and cycles. Field wiring should be completed by a qualified personnel to the planned location for the dryer. All electrical wiring should comply with your region's electrical codes.
- ❒ **A source of water, when using the aftercooler/intercooler and/or precooler.** The W Dryer's aftercooler/intercooler and precooler require tower, city, or chiller water at temperatures of 45° to 85°F {7° to 29°C}. Refer to the Specifications Sheet (page 2-7) for flow rate for your unit. Piping should be ran to the planned dryer location. Use flexible hose to connect the water pipes to the aftercooler/intercooler and/or optional precooler.
- ❒ **Minimum clearance for safe operation and maintenance.** You should maintain 24 in. {61 cm} clearance on all sides of the dryer.

⊷ Material and conveying lines installed. If you plan to use vacuum or compressed air loaders to fill the hopper, install conveying lines to the drying hopper location.

✎ **NOTE:** The aftercooler/intercooler reduces the temperature of air returning from the drying hopper, improving the efficiency of the desiccant.

Positioning the Dryer on the Floor

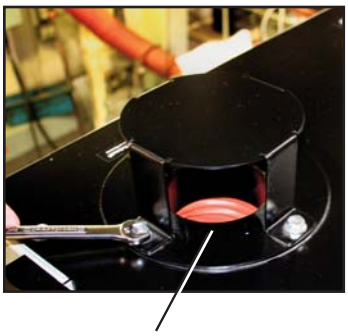
1 **Lift the dryer from the shipping container** using a fork truck.

2 **Position the dryer on the floor** near the hopper or ResinWorks sled. Make sure the location allows for the connection of all hoses, keeping hose lengths as short as possible.

Desiccant Cable Tie

Removing the Cable Tie from the Desiccant Wheel (W600-1000)

1 **Open the dryer side panels and remove the cable tie securing the desiccant wheel,** if it was not done while unpacking the dryer.



Regeneration Exhaust Cover

Installing the Regeneration Exhaust Cover

The Carousel Plus W Series Dryer's regeneration exhaust cover must be installed.

To install the regeneration exhaust cover:

1 **Remove the exhaust cover that is attached to the dryer's shipping pallet.**

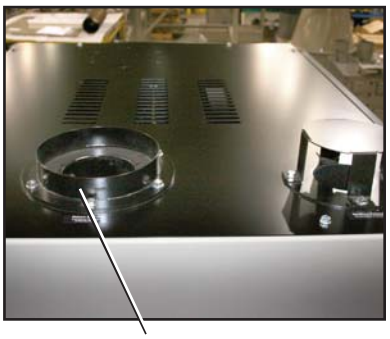
2 **Locate the bolt pattern at the top of the dryer**, on top of the regeneration exhaust outlet.

3 **Position the regeneration exhaust cover on top of the regeneration exhaust outlet**, aligning both bolt patterns.

4 **Secure the regeneration exhaust cover with supplied hardware**, using an appropriately sized wrench.

Installing the Return Air Adapter

(W600 - 1000)



The Carousel Plus W Series Dryer's return air adapter must be installed.

To install the return air adapter:

1. **Remove the return air adapter that is attached to the dryer's shipping pallet.**
2. **Locate the bolt pattern on the top of the dryer**, on top of the return air inlet.
3. **Position the return air adapter on top of the return air inlet**, aligning both bolt patterns.
4. **Secure the return air adapter with supplied hardware**, using an appropriately sized wrench.

Installing the Return Air Inlet and Air Outlet Adapters (W1600 - 5000)

The Carousel Plus W Series Dryer's return air inlet and air outlet adapters will be removed when the dryer is shipped

To install the return air inlet and air outlet adapters:

1. **Remove the return air inlet and air outlet adapters that are attached to the dryer's shipping pallet.**

2. **Locate the bolt patterns on the top of the dryer**, on top of the return air inlet and air out outlet.

3. **Position the return air adapter on top of the return air inlet**, aligning both bolt patterns.

4. **Secure the return air adapter with supplied hardware**, using an appropriately sized wrench.

5. **Position the air inlet adapter on top of the inlet air inlet**, aligning both bolt patterns.

6. **Secure the air inlet adapter with supplied hardware**, using an appropriately sized wrench.

Installing the Overhead Process Air Duct (W3200 - 5000)

The Carousel Plus W Series Dryer's overhead process air duct will be removed when the dryer is shipped.

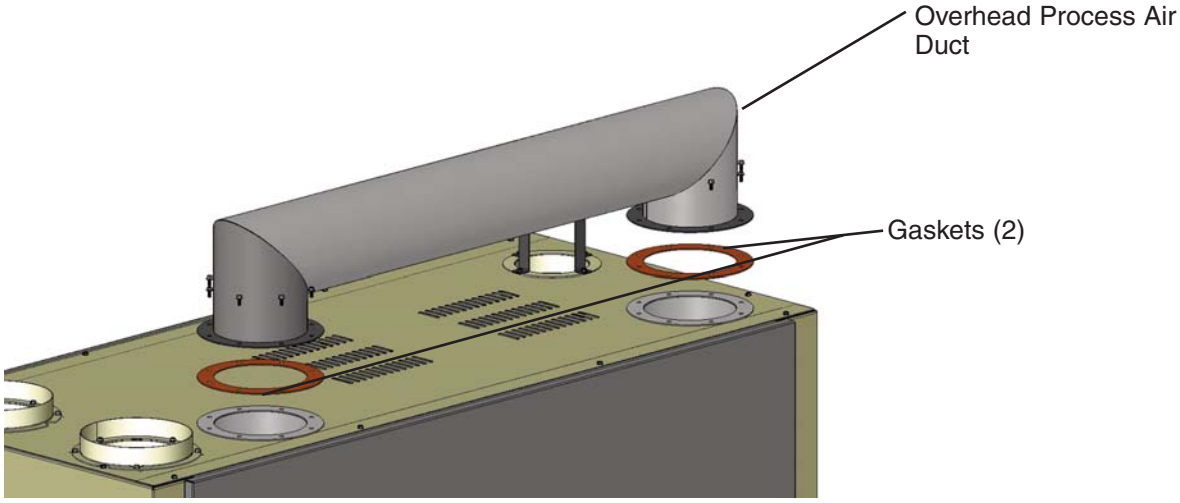
To install the overhead process air duct:

1. **Remove the overhead process air duct that is attached to the dryer's shipping pallet.** The piping will be shipped as one unit with included gaskets (2).

2. **Locate the bolt patterns on the top of the dryer**, over top of the overhead process air duct inlet and outlet.

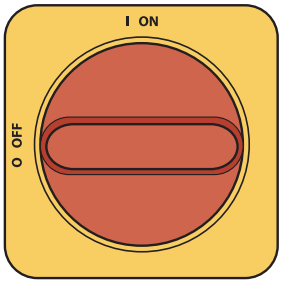
3. **Position the overhead process air duct on top of the overhead process air duct inlet and outlet making sure to place supplied gaskets between the overhead process air duct and the inlet and outlet of the dryer**, align all bolt patterns.

4. **Secure the piping with supplied hardware**, using an appropriately sized wrench.



Connecting the Main Power

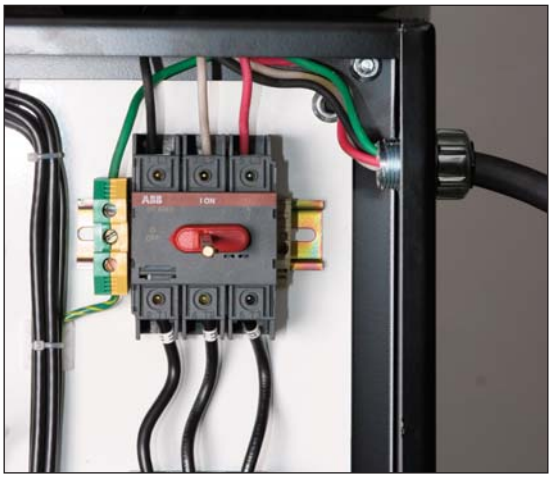
CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.



1 **Open the dryer's electrical enclosure.** Turn the disconnect dial on the dryer door to the Off or "O" position. Lock out the main power (see Page 1-6 for complete lock out information). Turn the captive screw, and swing the door open.

2 **Insert the main power wire** through the knockout in the side of the enclosure or the rear of the dryer. (the dryer's electrical wire connection location was a factory option and may be connected through the front or the rear of the dryer.) Secure the wire with an appropriate compression fitting or strain relief.

IMPORTANT: Always refer to the wiring diagrams that came with your dryer before making electrical connections.



3 **Connect the power wires** to the three terminals at the top of the power disconnect holder.

4 **Connect the ground wire** to the ground lug as shown in the photo.

Opening the Dryer Doors
(W1600 - 5000)

Carousel Plus W Series 1600-5000 Dryers designed after August 2007 will have locking side panel door bolts.

To unlock the side panel door bolts:

1 **Rotate the two (2) locking door bolts on the dryer door counterclockwise** with a regular screw driver.

2 **Close the dryer doors and rotate the two (2) locking door bolts clockwise** to resecure the dryer doors.

Dryer Door Locking Bolts (2) (W1600-5000)

Checking for Proper Air Flow

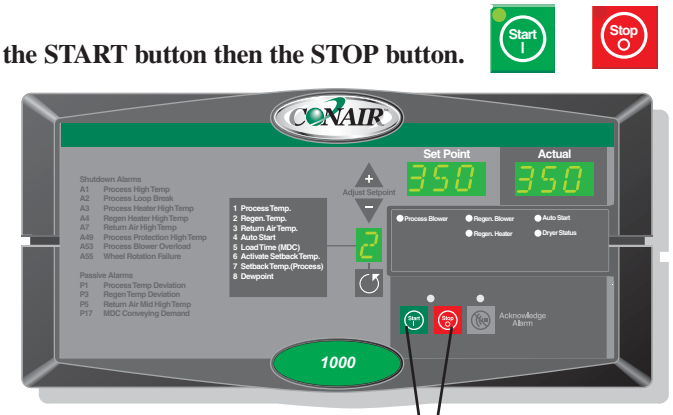
This procedure is needed on W600-5000 models if the phase detection option was not ordered with the dryer.

IMPORTANT: This procedure must be performed before the dryer's air hoses are connected to the hopper or before loading material into the hopper.

⚠ **CAUTION:** If the air flow direction is incorrect due to improper phase connection, material from the hopper can be pulled back into the dryer, causing permanent damage to this equipment.

1 **Turn on the main power to the dryer.** Make sure the dryer's disconnect dial is in the ON position. This powers up the control and the display lights will illuminate.

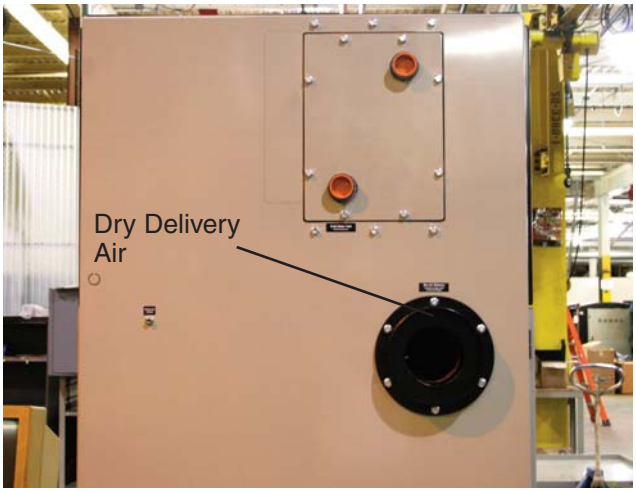
2 **Press the START button then the STOP button.**



Start and Stop Buttons

(continued)

Checking for Proper Air Flow (continued)



NOTE: Models W600-1000 dryer aftercooler and dry air delivery configuration shown. Location on larger models are different. Refer to the labeling on your dryer. See Installation section entitled, Installing the Return/Delivery Air Adapters, for proper air line connections.

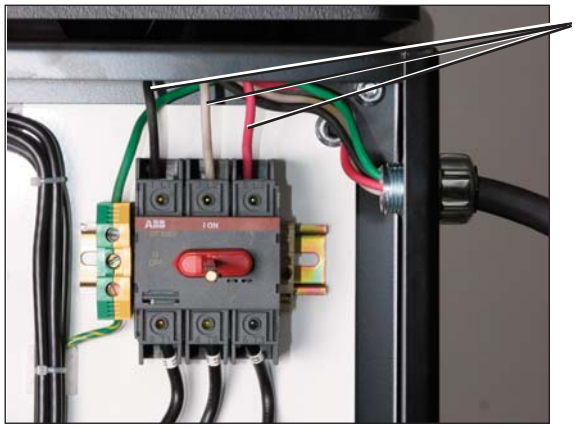
3 **Visually verify the blower motor is moving in the correct direction indicated by the arrow on the blower housing.** The W series 600-5000 dryers are equipped with centrifugal process blowers.

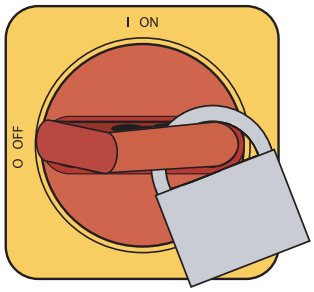
Checking for Proper Air Flow (continued)

4 If air flow is incorrect disconnect power, follow proper lockout procedures and swap any 2 of the 3 main power wires.

WARNING: All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the the machine serial tag and data plate.

If the air flow is reversed, the process blower is turning in the wrong direction. Turn off and lock out the main power source. Open the electrical enclosure and reverse any two leads connecting the main power supply to the dryer.

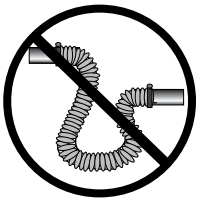




WARNING: All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the the machine serial tag and data plate.

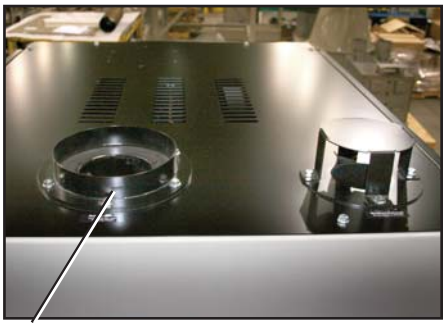
Connecting the Air Hoses to a Single Hopper (W600 - 1000)

Using the two flexible hoses provided, connect the inlet of the HTC and outlet of the drying hopper to the dryer. Make sure the dryer is located as close as possible to the hopper (10 ft {3.05 m} of hose supplied).



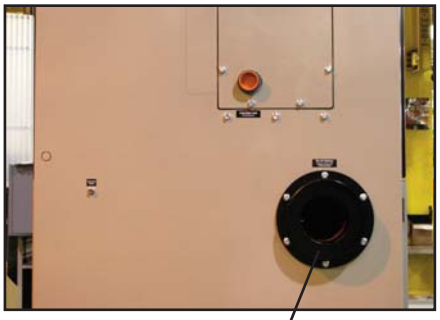
NOTE: Do not allow the flexible hoses to kink or crimp.

1 **Attach one hose from the return air inlet, located on top of the dryer,** to the outlet of the hopper.



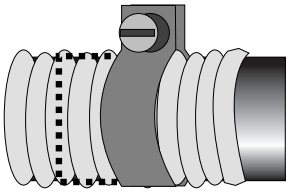
NOTE: Models W600-1000 dryer aftercooler and dry air delivery configuration shown. Location on larger models are different. Refer to the labeling on your dryer.

2 **Attach one hose from the delivery air outlet** to the inlet of the HTC.



NOTE: All air hose connections will be appropriately labeled.

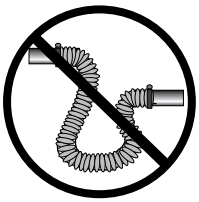
3 **Secure hoses with clamps.** The hose clamp should be secured at least 1/4 in. {0.64 cm} from the end of the inlet or outlet tube.



Connecting the Air Hoses to a Single Hopper (W1600 - 5000)

Using the two flexible hoses provided, connect the inlet of the HTC and outlet of the drying hopper to the dryer. Make sure the dryer is located as close as possible to the hopper (10 ft {3.05 m} of hose supplied).

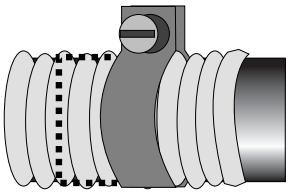
1 **Attach one hose from the return air inlet, located on top of the dryer,** to the outlet of the hopper.



NOTE: Do not allow the flexible hoses to kink or crimp.

2 **Attach one hose from the delivery air outlet, located on top of the dryer,** to the inlet of the HTC.

3 **Secure hoses with clamps.** The hose clamp should be secured at least 1/4 in. {0.64 cm} from the end of the inlet or outlet tube.



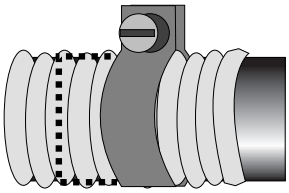
Connecting the Air Hoses to a ResinWorks

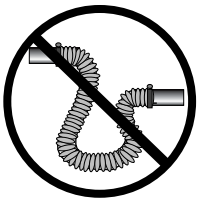
Using the two flexible hoses provided, connect the delivery air and return air manifolds of the ResinWorks to the dryer. Make sure the dryer is located as close as possible to the sleds (10 ft {3.05 m} of hose supplied).

1 **Attach one hose from the return air inlet** of the dryer to the return air manifold of the ResinWorks.

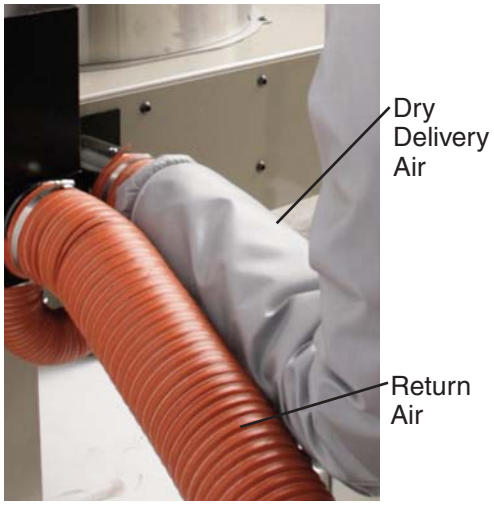
2 **Attach one hose from the delivery air outlet** of the dryer to the delivery air manifold of the ResinWorks.

3 **Secure hoses with clamps.** The hose clamp should be secured at least 1/4 in. {0.64 cm} from the end of the inlet or outlet tube.

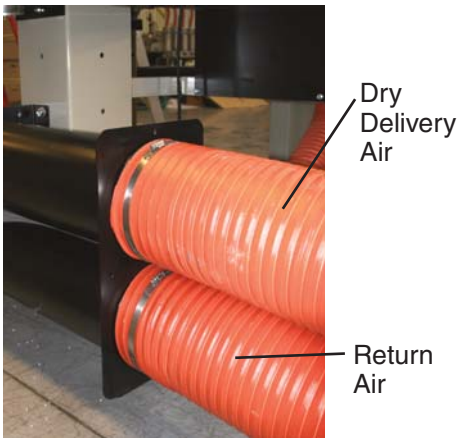




NOTE: Do not allow the flexible hoses to kink or crimp.



Insulated hose shown not standard.



Connecting the Dryer to the Hopper

If your dryer hose connection and your hopper HTC hose connection are not the same size, you will need a hose adapter. Contact Conair Parts 1 800-458-1960.

Connecting the Dryer to

✎ **NOTE:** Because the W600 - 5000 models require a separate heat source for the delivery air, all references to this heat source will be identified as “HTC” (Hopper Temperature Controller). When using this dryer with a HTC, reference the User Guide supplied with the HTC for installation instructions.

ResinWorks

If your dryer hose connection and the connection on your ResinWorks sled are not the same size, you will need to use a hose adapter. Contact Conair Parts 1 800-458-1960.

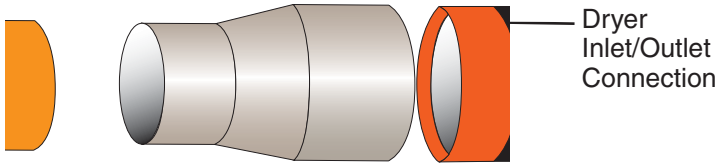
✎ **NOTE:** Because the W600 - 5000 models require a separate heat source for the delivery air, all references to this heat source will be identified as ResinWorks. When using this dryer with a ResinWorks sled reference the User Guide supplied with the ResinWorks sled for installation instructions.

Connecting Air Hose Adapters

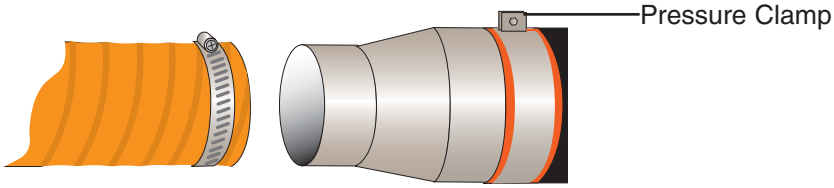
Depending on the hopper you purchased you may need to install an air hose adapter to connect the hopper to your dryer.

To connect the air hose adapter:

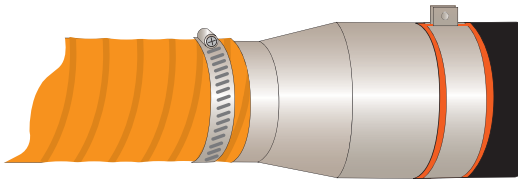
1 **Place high temperature gasket half way down over the dry air delivery outlet.**



2 **Place hose adapter inside high temperature gasket flush to the dryer outlet, secure with pressure clamp.**



3 **Attach the hopper inlet hose over the adapter, secure with clamp.**



Connecting the Aftercooler and Optional Precooler (W600 - 1000)

The aftercooler and/or optional precooler require a source of city, tower, or chiller water and a discharge or return line. You can use water at temperatures of 45 to 85°F {7 to 29°C}. But the water flow should be at least 3 gal/min {11.4 liters/min}.

Aftercooler Inlet

1 **Connect the water supply line to the aftercooler or precooler inlet.** If a manual shut off valve is used, it should be mounted on the inlet line.

Aftercooler Outlet

2 **Connect the water discharge or return line with the pressure relief valve to the aftercooler or precooler outlet.** Use the bracket supplied to secure the pressure relief valve to the back of the dryer.

IMPORTANT: Turn the water off when the dryer is not in use to prevent condensation.

TIP: Make the water supply and discharge / return connections with flexible hoses at least 24 in. (61 cm) long. This allows you to easily remove the aftercooler assembly for cleaning.

TIP: If an optional flow control is also being installed with the aftercooler, the manual shut off valve should be installed on the inlet line for the flow control.

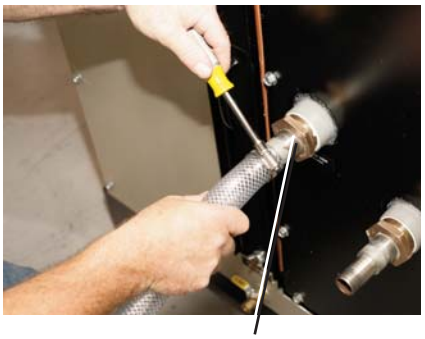
NOTE: Models W600-1000 dryer aftercooler and dry air delivery configuration shown. Location on larger models are different. Refer to the labeling on your dryer.

Connecting the Intercooler and Optional Precooler (W1600 - 5000)

TIP: Make the water supply and discharge / return connections with flexible hoses at least 24 in. (61 cm) long. This allows you to easily remove the intercooler assembly for cleaning.

TIP: If an optional flow control is also being installed with the intercooler, the manual shut off valve should be installed on the inlet line for the flow control.

The intercooler and/or optional precooler require a source of city, tower, or chiller water and a discharge or return line. You can use water at temperatures of 45 to 85°F {7 to 29°C}. But the water flow should be at least 3 gal/min {11.4 liters/min}.



Intercooler Inlet

1 **Connect the water supply line to the intercooler or precooler inlet.** If a manual shut off valve is used, it should be mounted on the inlet line.

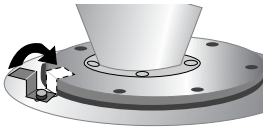
Intercooler Outlet

2 **Connect the water discharge or return line with the pressure relief valve to the intercooler or precooler outlet.** Use the bracket supplied to secure the pressure relief valve to the back of the dryer.

IMPORTANT: Turn the water off when the dryer is not in use to prevent condensation.

Mounting a Loader on the Hopper

If you have a Conair loader or vacuum receiver, you can use the flange and mounting clips provided on the top of the hopper. Refer to the manual that came with your receiver or loader for detailed installation instructions.

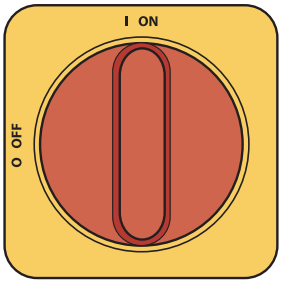


Testing the Installation

You have completed the installation. Now it's time to make sure everything works.

1 **Make sure there is no material in the hopper.** If you have mounted a loader or vacuum receiver on the hopper, disconnect the material inlet hose at the source.

2 **Turn on the main power to the dryer.** Make sure the dryer's disconnect dial is in the ON position. This powers up the control and the display lights will illuminate.



IMPORTANT: Be sure the cable tie has been removed from the desiccant wheel. (W600-1000 models)

3 **Press the START button.**

If everything is installed correctly:

- The green light on the start button will illuminate.
- The regeneration and process blowers and LEDs will turn on.
- The regeneration heater and LED will turn on.
- The LEDs will illuminate.
- The desiccant wheel starts turning.

(continued)

Testing the Installation (continued)

4 Press the STOP button.
If everything is installed correctly:

- The blowers will continue running as needed to cool the heaters.
  (until regeneration heaters are less than 150°F {66°C})

5 The test is over. If the dryer performed the normal operating sequences as outlined, you can load the hopper and begin operation. If it did not, refer to the *Troubleshooting section* of the User Guide.

SECTION
4

Operation

Carousel Plus W Series Dryer:
control panel DC-1. 4-2
Carousel Plus W Series Dryer DC-1
control functions 4-3
Control function flow chart 4-3
Control function descriptions 4-5
To start drying 4-15
To stop drying. 4-16
Using the auto start countdown function . . . 4-17
How to disable the auto start on the
DC-1 control 4-17
Using dewpoint control. 4-18

Carousel Plus W Series Dryer: Control Panel DC-1

Increment/Decrement Buttons

Used to increase and/or decrease the setpoint of a control function.

Setpoint Display

Shows the setpoint value.

Actual Display

Shows the actual temperature value.

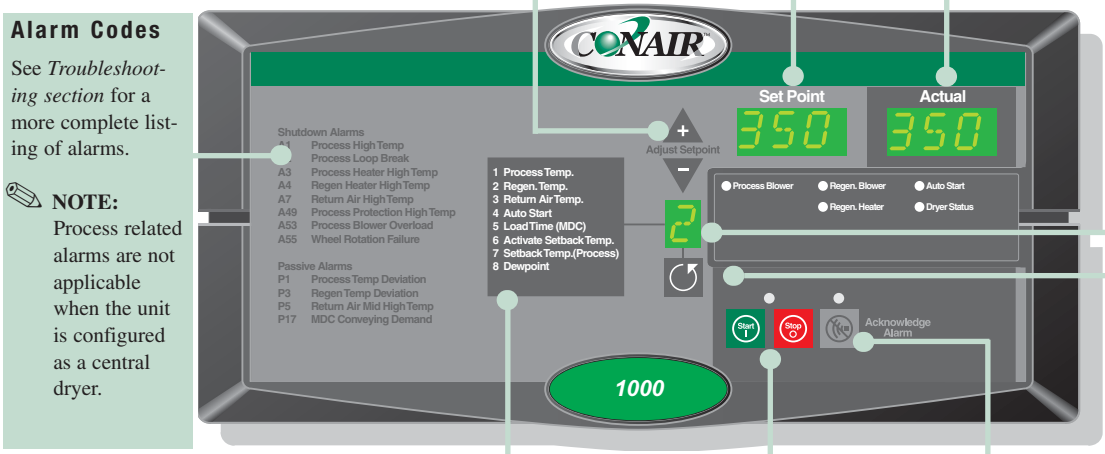
Menu Number Display

Displays the menu number corresponding to what is shown in the setpoint and actual displays. Can also display letters for alarms and setup.

Alarm Codes

See *Troubleshooting section* for a more complete listing of alarms.

NOTE: Process related alarms are not applicable when the unit is configured as a central dryer.



Menu List

Numbers 2, 3, and 4 are standard items that will always be present. Number 8 is a screen associated with options. If the option is not installed, the screens will not be displayed.

NOTE: #1 Process is not displayed when the unit is configured as a central dryer.

Start and Stop Buttons

Press **"Start"** to start the dryer. Press **"Stop"** to stop the dryer.

Acknowledge Alarm Button

Press once to silence the optional audible alarm and display alarm messages. Press again to clear the alarm. If pushed when no active alarm is present, the most recent alarm will be displayed.

Scroll Button

Press to scroll through the closed loop menu list. Pressing the Scroll button moves you down the list.

Carousel Plus W Series Dryer DC-1 Control Functions

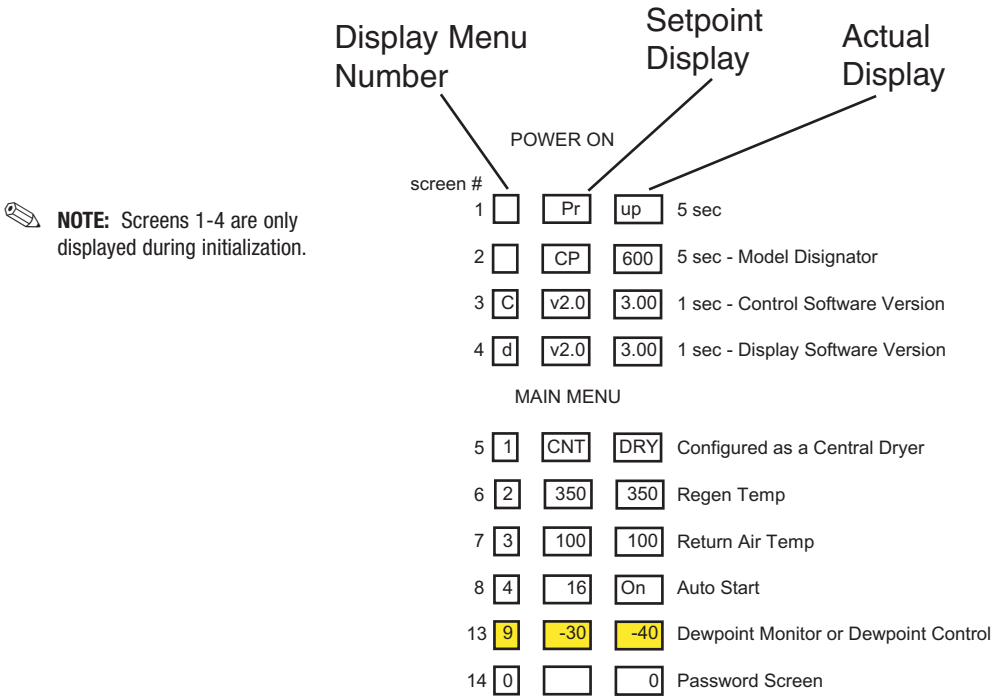
Dryer functions are values that you can set or monitor. Press the Scroll button to access the function within a Menu list until the function you want to set or monitor appears in the LED display.

✎ **NOTE:** Grey shaded screens denote optional functions. If the options were not purchased with the dryer, those screens will not appear.

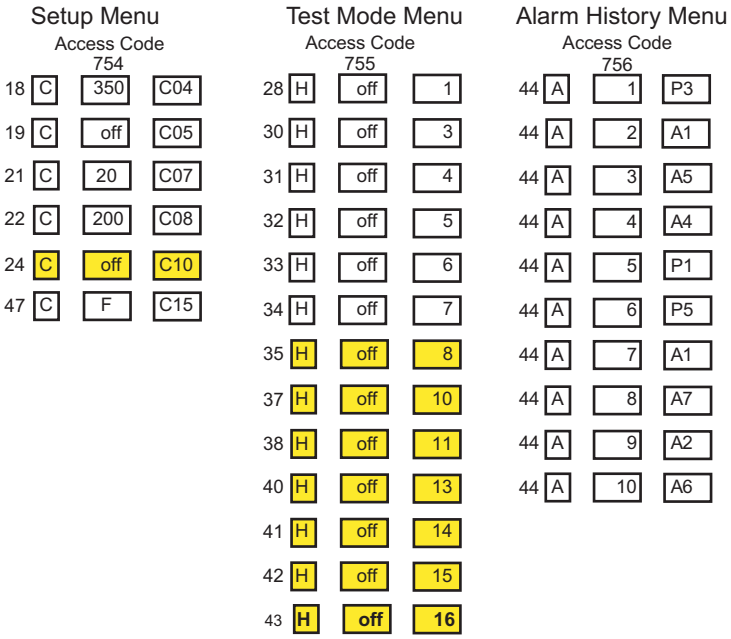
Control Function Flow Chart

The following flow chart provides a quick summary of the control functions. For an explanation of each control function, see Control Function Descriptions (page 4-5).

The Main Menu functions can be accessed by pressing the Scroll button when on Screen 5. To access the Setup, Test Mode, and Alarm History Menus, the appropriate access code must be entered. Refer to the instructions for Screen 14 (page 4-7).


Display Menu Number
Setpoint Display
Actual Display
POWER ON
screen #
1 Pr up 5 sec
2 CP 600 5 sec - Model Disignator
3 C v2.0 3.00 1 sec - Control Software Version
4 d v2.0 3.00 1 sec - Display Software Version
MAIN MENU
5 1 CNT DRY Configured as a Central Dryer
6 2 350 350 Regen Temp
7 3 100 100 Return Air Temp
8 4 16 On Auto Start
13 9 -30 -40 Dewpoint Monitor or Dewpoint Control
14 0 0 Password Screen

NOTE: Screens 1-4 are only displayed during initialization.



NOTE: In the event new control boards are installed, screens showing Process and MDC may be present. The boards will need to be configured for a central dryer. If this is not done, alarms will occur.

Control Function Descriptions

Screen	Function
SCREEN 1 	Once power is turned on, this screen is displayed for 5 seconds while the control goes through self-checking.
SCREEN 2 	Once power is turned on and screen 1 is displayed for 5 seconds, this screen is displayed for another 3 seconds. It shows the dryer model number for which the control is configured.
SCREEN 3 	After the model number is displayed, this screen flashes for 1 second and displays the control board software version.
SCREEN 4 	After the control version is shown, the screen flashes again for 1 second and displays the display board software version.
SCREEN 5 (Default Screen) 	Indicates configuration as a central dryer.
SCREEN 6 	Shows the regeneration air setpoint and actual temperature. The setpoint can not be changed from this screen; it is shown only as a reference.

Control Function Descriptions (continued)

Screen	Function
SCREEN 7 	This screen shows the actual return air temperature measured at the inlet to the process blower. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. *W1600-5000 dryers designed prior to August 2007,* the return air temperature is measured at the inlet to the process blower.) If the optional aftercooler/intercooler flow control is installed, a setpoint will be displayed on this screen as well. The (+) or (-) buttons can be used to change the set point. Holding the (+) or (-) buttons in will allow the number to ramp up faster the longer the button is held.
SCREEN 8 	This screen is used to set the dryer to auto start. The dryer must be on but not running to set auto start. The value shown is the countdown time setpoint. It is adjustable from 0.1 hours to 150 hours. Once the countdown time is set, press the **"START"** button. The display will show ON to tell the operator that the auto start is ON and counting. The auto start LED on the display also flashes green when the auto start is armed and counting down. The LED will turn solid green when the dryer starts. The dryer will begin operating when the control has finished counting down.

Control Function Descriptions (continued)

Screen	Function
SCREEN 13 (Dewpoint Monitor/ Dewpoint Control Option) 	If the dryer has the dewpoint monitor option installed, this screen will show the actual dewpoint of the process delivery air. With the dewpoint monitor option installed, there will only be an actual display (no setpoint value). Although the dryer is capable of producing dewpoints much lower than -40°F {-40°C}, the minimum sensor range is -40°F {-40°C}. Dewpoint control will automatically adjust the regeneration temperature to maintain dewpoint setpoint. Dewpoint control is not active with -40°F {-40°C} setpoint.
SCREEN 14 	This is the password entry screen that gives the user access to the Set Up, Test Mode, and Alarm History screens. The user can get to the password protected control functions through this screen by pressing the Scroll button and the adjust setpoint button (-) at the same time. This works only if you are on menu #1 (Screen 5). The access codes are as follows: Set Up Screens 754 Test Mode Screens 755 Alarm History Screens 756 To exit the password section, enter 500 and press scroll or cycle the power.

(continued)

Control Function Descriptions (continued)

Screen	Function
✎ Screens 18-24 require access code 754.	
SCREEN 18 (Set up Screen) C 350 C04	This is the regeneration setpoint screen. ✎ **NOTE:** There is normally no need to change this temperature. Consult Conair prior to changing this setting.
SCREEN 19 (Set up Screen) C off C05	This is the regeneration heater autotune screen. The autotune function can be turned on by pressing the (+) key. Once the (+) key is pressed, the screen will show "On" and then start the autotune process. This may take a minute or so to complete. When finished the display will read "don". The new PID values are automatically saved. An autotune should be performed on a cold dryer. It will autotune to the setpoint value entered on Screen 18.
SCREEN 21 (Set up Screen) Regeneration Differential Temperature C 20 C07	This screen shows the minimum differential temperature between the regeneration inlet and the outlet at the desiccant wheel. If the actual temperature differential is under the set value, the dryer will alarm (P31), but will still run. The temperature range is 5 to 100°F {-15 to 38°C}. The default temperature is 20°F {-7°C}.

Control Function Descriptions (continued)

Screen	Function
✎ Screens 18-24 require access code 754.	
SCREEN 22 (Set up Screen) Regeneration Air Temperature C 200 C08	This screen shows the actual temperature of the regeneration air at the outlet of the desiccant wheel.
SCREEN 24 Aftercooler/ Intercooler Flow Control Enable (Option) C off C10	This screen is the Aftercooler/Intercooler Flow Control Enable screen. By pressing the (+) or (-) keys, this function can be turned on or off. When off, the dryer will not open the optional flow control valve to control the return air temperature. There will also be no setpoint value on Menu #3, Screen 7. This screen is not visible if the aftercooler/intercooler flow control option is not installed on the dryer.
✎ Screen 28-43 require access code 755.	
SCREEN 28 (Test Mode Screen) H off 1	This is the Test Mode screen for the process blower. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the process blower output will be turned on for 3 seconds and then shut off automatically.

(continued)

Control Function Descriptions (continued)

Screen	Function
✎ Screen 28-43 require access code 755.	
SCREEN 30 (Test Mode Screen) H off 3	This is the Test Mode screen for the regeneration blower. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the regeneration blower output will be turned on for 3 seconds and then shut off automatically.
SCREEN 31 (Test Mode Screen) H off 4	This is the Test Mode screen for the regeneration heater. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the regeneration heater output will be turned on for 3 seconds and then shut off automatically. ✎ **NOTE:** The isolation contactor will not be engaged so no electricity will go the heater. The solid state relay contacts should close.
SCREEN 32 (Test Mode Screen) H off 5	This is the Test Mode screen for the wheel motor. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the wheel motor output will be turned on for 3 seconds and then shut off automatically.
SCREEN 33 (Test Mode Screen) H off 6	This Test Mode screen is not used in the current program.

Control Function Descriptions (continued)

Screen	Function
✎ Screen 28-43 require access code 755.	
SCREEN 34 (Test Mode Screen) 	This is the Test Mode screen for the isolation contactor. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the isolation contactor output will be turned on for 3 seconds and then shut off automatically.
SCREEN 35 (Test Mode Screen) 	This is the Test Mode screen for the alarm output (horn and/or red light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically. ✎ **NOTE:** The alarm light on the membrane switch will not come on. If the optional alarm horn or red light is not installed nothing will happen.
SCREEN 37 (Test Mode Screen) 	This is the Test Mode screen for the aftercooler/intercooler flow control valve. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the aftercooler/intercooler flow control valve output will be turned on for 3 seconds and then shut off automatically. ✎ **NOTE:** If the optional aftercooler/intercooler flow control valve is not installed nothing will happen.
SCREEN 38 (Test Mode Screen) 	This screen is not used in the current program.

(continued)

Control Function Descriptions (continued)

Screen	Function
✎ Screen 28-43 require access code 755.	
SCREEN 40 (Test Mode Screen) 	This screen is not used in the current program.
SCREEN 41 (Test Mode Screen) 	This screen is not used in the current program.
SCREEN 42 (Test Mode Screen) 	This is the Test Mode screen for the alarm output (yellow light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically. ✎ **NOTE:** If the optional tricolor light is not installed nothing will happen.
SCREEN 43 (Test Mode Screen) 	This is the Test Mode screen for the alarm output (green light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically. ✎ **NOTE:** If the optional tricolor light is not installed nothing will happen.

Control Function Descriptions (continued)

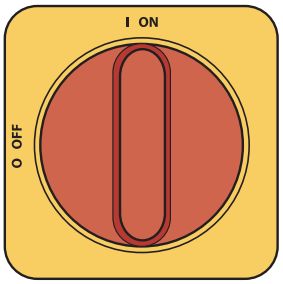
Screen	Function
✎ Access code 756 required. SCREEN 44 (Alarm Screen) A 1 P3	This is the first Alarm History screen. In this section, the last 10 alarms that have occurred are saved, starting with the most recent alarm. The number in the setpoint screen shows the list of alarms 1-10. The alarm code shows up in the actual screen. Some of the alarm codes are shown on the display label. Please refer to the alarm section of this manual for all alarm code definitions.
A 2 A1 A 3 A5 A 4 A4 A 5 P1 A 6 P5 A 7 A7 A 8 A2 A 9 A6 A 10 P2	These are the additional alarm screens. See the explanation above.

Control Function Descriptions (continued)

Screen	Function
✎ Screen 47 require access code 754. SCREEN 47 (Degree F/Degree C) C F C15	This is the temperature units screen. It is used to change the temperature display from °F to °C or °C to °F. Use the (+) or (-) keys to toggle between °C and °F.

To Start Drying

1 Make sure there is material in the hopper.



2 Turn on the main power to the dryer. Make sure the dryer's disconnect dial is in the ON position. This powers up the control and the display lights will illuminate.

3 Press the START button.

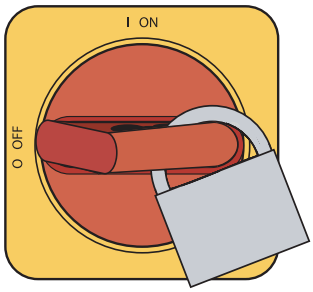
If everything is installed correctly:

- The green light on the start button will illuminate.
- The process and regeneration blowers turn on and the LEDs will illuminate.
- The regeneration heater turns on and the LED will illuminate.
- The desiccant wheel starts turning.

NOTE: Once the dryer has been started, go to the ResinWorks or HTC and set the set-point, then turn on the unit.

To Stop Drying

NOTE: Turn off the ResinWorks or HTC and allow the heaters to cool (3 to 5 minutes) before turning off the dryer.



1 **Press the STOP button.** The Stop LED blinks red.

- The blowers continue running for a few minutes to cool the heaters.

2 **Be sure to disconnect and lockout the main power** if you have stopped the dryer to perform maintenance or repair.

IMPORTANT: Do not use the main power switch to stop the dryer. Turning off power to the control and dryer during normal operation prevents the necessary cool-down period, and can trigger the shutdown/high temperature alarm during your next drying cycle.

CAUTION: Improper shut down can cause damage to your dryer.

Using the Auto Start Countdown Function

The countdown function allows the user to set the Carousel Plus W Series Dryer to automatically start at a predetermined time. The countdown time can be set from 0.1 to 150.0 hours.

To set the countdown time:

1 Use the Scroll button to access the function (Menu 4, Screen 8).

2 Use the Setpoint Adjust keys to set the desired countdown time in hours.

3 Press the Start button. The Auto Start LED will blink to indicate that Auto Start is armed.

How to Disable the Auto Start on the DC-1 Control

To disable auto start once armed cycle the power off and on.

Using Dewpoint Control

Dewpoint control is a feature that can help you to reduce energy consumption. It does this by varying the temperature of the regeneration air from its default setpoint of 350° F {177° C}, to maintain a setpoint that you have entered on the process dewpoint screen (Screen 11).

Example:

If your material is not difficult to dry, it may dry adequately with -20° F {-29° C} dewpoint air. When -20° F {-29° C} is entered as the setpoint (Screen 11), the dryer will gradually lower the regeneration air temperature to a point where the dryer's delivery air is controlled at -20° F {-29° C} dewpoint.

The dewpoint control is active with setpoint values of -39° F {-39.4° C} and higher. When the setpoint is -40° F {-40° C} or lower, the regeneration temperature will be maintained at the default temperature of 350° F {177° C} and the dewpoint control is inactive.

NOTE: For more information concerning specific dewpoint control screens, see Control Function Descriptions, page 4-5.

SECTION
5

Maintenance

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Preventative Maintenance Checklist

Routine maintenance will ensure optimum operation and performance of the W Series Carousel Plus Dryer. We recommend the following maintenance schedule and tasks.

• Whenever you change materials

❒ **Drain and clean the hopper.**

• Weekly, or as often as needed

❒ **Clean or replace the process and regeneration filters.**
You may need to clean filters more often than weekly. Frequency depends on how much material you process and how dusty or full of fines it is.

❒ **Inspect hoses and hose connections.**
Check for damage, kinks, or loose hose clamps. Replace any hoses that show signs of damage or wear. Reposition and tighten loose hose clamps.

• Monthly

❒ **Clean the aftercooler/intercooler and optional precooler coils.**
You may need to clean the coils more often than monthly. Frequency will depend on the type and volume of material you process.

• Every six months

❒ **Inspect gaskets for damage or wear.**
Damaged gaskets can allow moisture to seep into the closed-loop drying system. Replace any gasket that is torn or cracked.

❒ **Inspect the overhead process air duct connections.**
(W3200-5000) Ensure that all connections are tighten properly and have no air leaks.

❒ **Verify dewpoint readout and performance with calibrated portable instrument.**

❒ **Measure current draw on all 3 legs of heater wires.** This is to ensure that the heater is working properly.

Checking the Dewpoint

It is a good idea to monitor the dewpoint performance of your dryer periodically with a calibrated portable dewpoint monitor, to ensure it is performing at maximum capacity. Even if your dryer has a dewpoint readout, comparing it to a portable instrument periodically will confirm that the dewpoint sensor and readout is performing properly.

To check dewpoint:

1. **Connect your portable dewpoint meter to the dewpoint check port of the dryer.**
2. **Turn on the portable instrument,** and ensure there is positive airflow through the sensor.
3. **Monitor the readout and allow ample time for it to stabilize before disconnecting the portable dewpoint monitor.** Some dewpoint monitors require a substantial amount of time for residual moisture to be purged from the sensor.
4. **In the event the dewpoint in not satisfactory,** refer to the *Troubleshooting section* of the manual, under A28 and P9 alarm for DC1.

Alternate Procedure: (for dryers with no dewpoint check port)

1. **Stop dryer and allow it to cool.**
2. **Swing open or remove the left side panel.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*
3. **Remove the 1/8 inch NPT pipe plug at the process air outlet** on the bottom manifold of the desiccant wheel assembly.
4. **Connect a portable dewpoint meter** to the hole from which the plug was just removed.

✎ **NOTE:** Portable dewpoint monitors purchased from Conair are provided with a male connector that plugs into the dewpoint check port. If you purchased your portable instrument elsewhere, the male connector is available through the Conair parts department.

✎ **NOTE:** The dewpoint check port was not included on early dryers. It can be added easily. Contact the Conair parts department or follow the alternate procedure.

Replacement dewpoint monitors, male connectors and dewpoint check ports are available from Conair.

Contact Conair Parts
(800) 458 1960
From outside of the
United States, call:
(814) 437 6861

Checking the Dewpoint (continued)

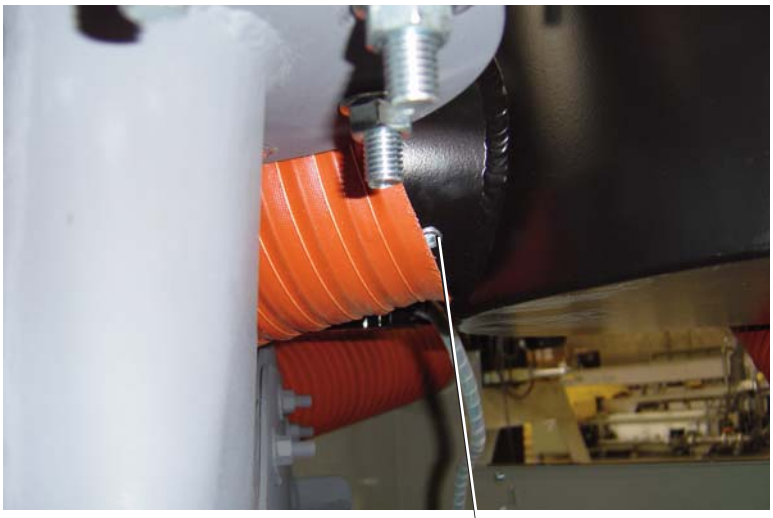
5 **Turn on the portable instrument,** and ensure there is positive airflow through the sensor.

6 **Monitor the readout and allow ample time for it to stabilize before disconnecting the portable instrument.** Some dewpoint monitors require a substantial amount of time for residual moisture to be purged from the sensor.

7 **In the event the dewpoint is not satisfactory,** refer to the *Troubleshooting section* of the manual, under A28 and P9 alarms for DC1.

8 **Stop the dryer, and allow it to cool down.** Then disconnect your portable instrument and replace any pipe plugs that may have been removed.

9 **Close or replace the side panel.**



Cleaning the Hopper

CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

The hopper, spreader cone, and discharge assembly should be cleaned thoroughly between material changes to prevent resin contamination.

1. **Close the hopper slide gate.**
2. **Place a container beneath the hopper's drain port** to catch the material.
3. **Open the drain port** and allow the material to drain.
4. **Open the hopper door and wipe out the inside** of the hopper.
5. **Clean the return air screen** at the return air outlet of the hopper.

CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

6. **Remove the container from beneath the hopper and replace the drain port cover** before filling the hopper with material.

Cleaning the Process Filter

Clogged filters reduce air flow and dryer efficiency. Cleaning frequency depends on how much material you process and how dusty or full of fines it is.

Carousel Plus W-series Dryers 600-1000

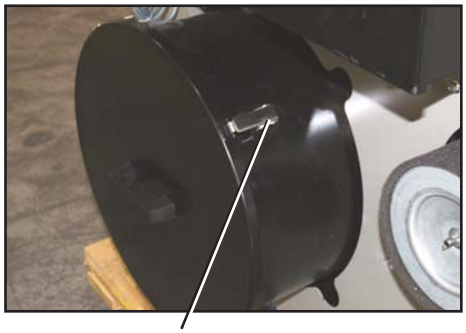
1 **Push in on the sides** to release the tabs on the front cover. Remove the cover.

NOTE: Larger dryer models (W1600 - 5000) do not have covers.

CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

2 **Remove the cover wing nut,** then pull the filter cap off.

Carousel Plus W-series Dryers 1600-5000



2a **Remove the four (4) filter cap cover latches**, then pull the filter cap off.

Process Fitter Cap Latch (4)

Cleaning the Process Filter (continued)

Carousel Plus W-series Dryers 600-5000

3 **Remove the filter wing nut,** then remove the filter.

4 **Remove outer filter** and clean it with soapy water. Let air dry.

NOTE: On models W1600-5000 the process filter will not have an outer filter.

5 **Clean the filter by laying it on its side and gently tapping it on the floor.** Replace damaged, worn, or clogged filters.

6 **Reverse the procedure to reinstall the process filter.** Ensure that the gasket on filter cap is in place and in good condition.

CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

TIP: If gasket on the process filter cap becomes loose or detached from the filter cap, resecure with high temperature silicone adhesive.

Cleaning the Regeneration Filter

Clogged filters reduce air flow and dryer efficiency. Cleaning frequency depends on the condition of your dryer's ambient air.

NOTE: Dirty or clogged regeneration filters are the leading contributor of dryers not reaching desired dewpoints.

CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

1 **Push in on the sides** to release the tabs on the front cover. Remove the cover.

NOTE: Larger dryer models (W1600 - 5000) do not have covers.

2 **Remove the filter wing nut,** then remove the filter.

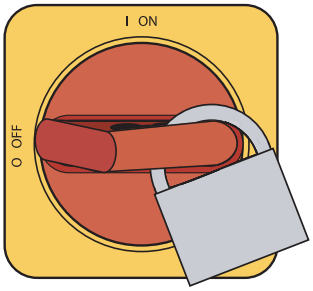
3 **Remove outer filter** and clean it with soapy water. Let air dry.

4 **Clean the filter by laying it on its side and gently tapping it on the floor.** Replace damaged, worn or clogged filters.

5 **Reverse the procedure to reinstall the regeneration filter.**

CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

Cleaning the Aftercooler/ Intercooler Coils

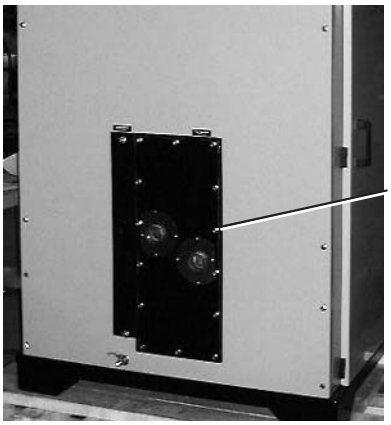


You need to clean the aftercooler/intercooler coils to keep them working efficiently. Cleaning frequency depends on the type and amount of material you process.

1 **Stop the dryer and lockout the main power.**

2 **Turn off the water flow to the water supply line.** Disconnect supply and return lines.

✎ **NOTE:** If an optional flow control was added with the aftercooler/intercooler, remove the compression fitting from the aftercooler/intercooler inlet. Loosen the fitting on the flow control, then swing the copper water supply tube out and away from the aftercooler/intercooler inlet.



W1600 - 5000 Models

W600 - 1000 Models

3 **Remove the bolts securing the aftercooler/intercooler cover.** Remove the cover.

4 **Remove the aftercooler/intercooler by pulling it out** of the aftercooler/intercooler housing.

(continued)

Cleaning the Aftercooler/ Intercooler Coils (continued)

5 **Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.

✎ **NOTE:** In cases of heavy volatiles, steam cleaning or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

6 **Inspect the condition of the gasket.** If it is damaged, replace the gasket.

7 **Reassemble** by repeating the steps in reverse order.

8 **Connect the water supply line to the inlet.** If a manual shut off valve is used, it should be mounted on the inlet line as well.

9 **Connect the outlet of the aftercooler/intercooler to the inlet of the flow control valve** using the pre-shaped copper tubing and compression fittings provided.

Cleaning the Precooler Coils

You need to clean the precooler cooling coils to keep them working efficiently. See Appendix B for details.

Cleaning the Volatile Trap on the Demister

If you have the optional volatile trap, you need to clean the trap to keep it working efficiently. See Appendix C for details.

Inspecting Hoses and Gaskets

Loose or damaged hoses and gaskets can allow moisture to seep into the closed-loop drying system.

1. **Follow the hose routing of all the hoses within the dryer and inspect all hoses, clamps, fittings, and gaskets.**
2. **Tighten any loose hose clamps or fittings.**
3. **Replace worn or damaged hoses and gaskets.**

SECTION
6

Troubleshooting

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Before Beginning

You can avoid most problems by following the recommended installation and maintenance procedures outlined in this User Guide. If you do have a problem, this section will help you determine what caused it and how to fix it.

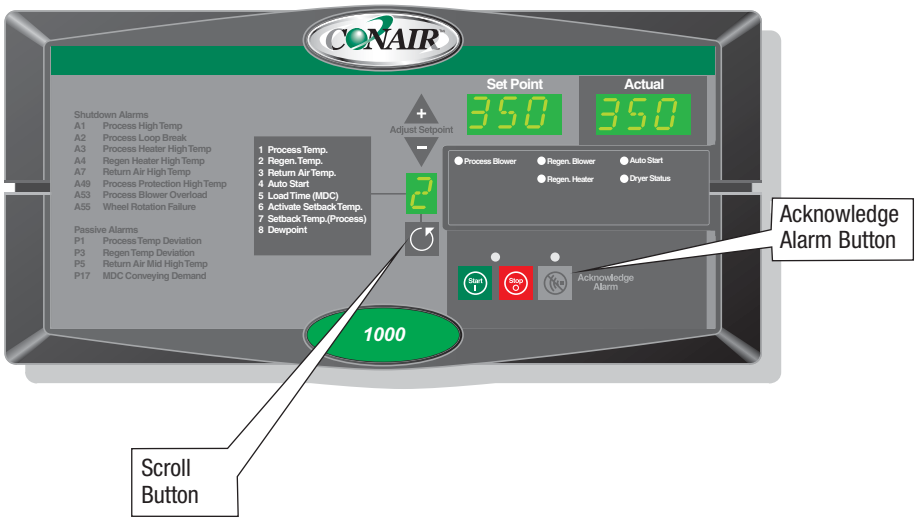
Before you open the side panels of the dryer be sure to:

❑ **Diagnose causes from the control panel.**

1 **Press** **once to silence the optional audible alarm and display the alarm message.**

2 **Address the alarm message and fix the problem.** (Refer to the alarm descriptions later in this section.)

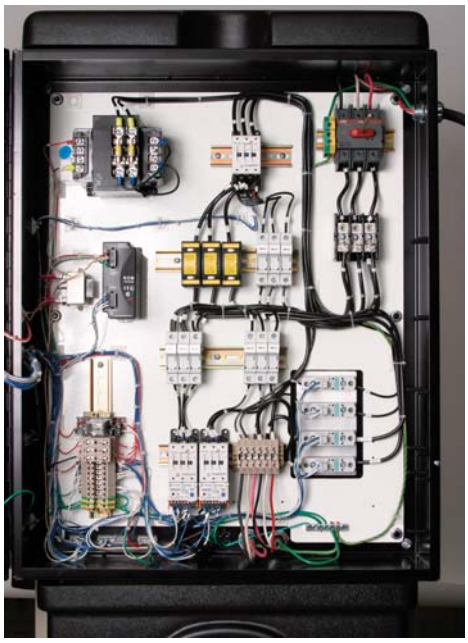
3 **Press** **again to clear the alarm. If the alarm reappears the problem was not fixed.**



Before Beginning (continued)

❑ **Find the wiring and equipment diagrams that were shipped with your dryer.** These diagrams are the best reference for correcting a problem. The diagrams also will note any custom features, such as special wiring or alarm capabilities, not covered in this User Guide.

See warnings below. Open the electrical enclosure to check fuses and heater contactors.



A Few Words of Caution

The Carousel Plus W Series Dryer is equipped with numerous safety devices. Do not remove or disable them. Improper corrective action can lead to hazardous conditions and should never be attempted to sustain production.

WARNING: Only qualified service personnel should examine and correct problems that require opening the dryer's electrical enclosure or using electrical wires to diagnose the cause.

WARNING: High voltage. Always stop the Carousel Plus dryer, disconnect and lock out the main power source before troubleshooting or performing repairs.

CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside of the dryer and hopper.

How to Identify the Cause of a Problem

✎ **NOTE:** Pushing the Acknowledge Alarm button when there is no active alarm will display the most recent alarm code.

✎ **NOTE:** The dryer cannot be started if a passive alarm is present on power-up.

Dryer alarms are indicated by an illuminated Acknowledge Alarm light on the W Series Dryer control panel. Shutdown alarms will energize optional audible and visual alarm indicators.

A problem can trigger two types of alarms:

- **Shutdown:** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive:** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

When the alarm light is displayed:

1. **Press the Acknowledge Alarm button once to silence the optional audible alarm and display the alarm message.** Pressing the Acknowledge Alarm button once also changes the alarm LED from blinking to solid.
2. **Find the error message in the diagnostics table** of this *Troubleshooting section*. Use information provided to diagnose and resolve the cause of the alarm.
3. **Note that, after correcting the problem, pressing the Acknowledge Alarm button a second time will clear the alarm.** If the alarm reappears, the cause has not been resolved.

✎ **NOTE:** When the dryer detects abnormally high temperature in the process heater, the dryer immediately shuts down and an error message appears in the display window.

Alarms

A problem can trigger two types of alarms:

NOTE: Shutdown alarms will cause the dryer to go through the normal shut down procedure to cool the heaters, then it will stop running.

- **Shutdown (A#):** If the red Acknowledge Alarm LED is blinking, the alarm is a shutdown alarm. The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer. Note that once the Acknowledge Alarm button is pressed once, the blinking red LED becomes solid.
- **Passive (P#):** If the amber Acknowledge Alarm LED is blinking, the alarm is a passive alarm. The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer. Note that once the Acknowledge Alarm button is pressed once, the blinking amber LED becomes solid.

Problem	Possible cause	Solution
A4 - Regeneration Heater High Temperature – The snap switch in the regeneration heater tube activated due to excessive temperature.	The regeneration exhaust is blocked or the air hoses are loose.	Locate and remove any airflow restrictions. Tighten any loose hoses.
	The regeneration blower is not running or running in the wrong direction.	Correct the cause of the non-running blower or reverse the rotation of the blower.
	The isolation contactor failed in the closed position.	Replace the isolation contactor.
	The heater solid state relays (SSRs) failed.	Replace the failed heater solid state relays (SSRs).
	The regeneration heater output on the board has failed.	Replace the board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A7 - Return Air High Temperature – If the return air temperature at the inlet to the blower is greater than 180°F {82°C}, it shuts down the dryer. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. *W1600-5000 dryers designed prior to August 2007,* the return air temperature is measured at the inlet to the process blower.)	The hopper does not contain enough material.	Make sure your material supply system is working properly.
	You are drying at a high drying temperature above 120°F {49°C} or you are running at low throughputs.	Ensure water flow to the aftercooler/intercooler.
	The aftercooler/intercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler/intercooler coils are dirty.	Clean the aftercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*
A23 & P3 - Regeneration Temperature Deviation – The regeneration temperature exceeds the deviation band for the specified time. Default values are 10°F {6°C} for 5 seconds.	One of the solid state relays (SSRs) failed in the closed position.	Replace the failed solid state relays (SSRs).
	The heater has become defective.	Check the heater fuses and resistance across each leg of the regeneration heater
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.
	The air hose connections are loose.	Tighten all air hose connections.
	The output on the board has failed.	Replace the board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A25 & P5 - Return Air Mid-High Temperature – If the return air temperature is between 150 and 180°F {66 and 82°C}. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. *W1600-5000 dryers designed prior to August 2007,* the return air temperature is measured at the inlet to the process blower.)	The hopper does not contain enough material.	Make sure your material supply system is working properly.
	You are drying at a high drying temperature above 120°F {49°C} or running at low throughputs.	Ensure water flow to the aftercooler/intercooler.
	The aftercooler/intercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler/intercooler coils are dirty.	Clean the aftercooler/intercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*
A26 & P6 - Regeneration High Temperature – If the regeneration temperature exceeds the high temperature limit for the specified time. Default values are 400°F {204°C} for 20 seconds	One of the solid state relays (SSRs) failed in the closed position.	Replace the failed solid state relays (SSRs).
	The output on the board has failed.	Replace the board.
A27 & P7 - Regeneration Low Temperature – The regeneration temperature is less than the low temperature for the specified time (200°F {93°C} for 20 seconds).	The regeneration heater has failed.	Check the heater fuses, and resistance across each leg of the regeneration heater.
	The output on the control board has failed or the fuse has blown.	Replace the control board or the fuse.
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A28 & P9 - Process Dewpoint – The dewpoint has not fallen below the setpoint. If the dewpoint goes below the setpoint for 180 seconds the alarm should go away. ✎ **NOTE:** The alarm is not active for the first 5 minutes.	Defective sensor.	Replace the sensor.
	The hose or wiring connections to the sensor block are loose or have fallen off.	Check wiring and hose connections to the sensor, resecure if needed.
	Poor regeneration air flow.	Remove the air flow restrictions, dirty filters, etc.
	Desiccant wheel not turning.	*See A55 & P31*
	The desiccant wheel may be contaminated.	Check the desiccant for contamination, replace if needed. *See Troubleshooting section, entitled Replacing the desiccant wheel assembly.*
		Install plasticizer/volatile trap for severe situations.
	Leaks in the process air stream.	Check for worn or loose hoses.
	Power Purge blower not running. (Models 2400 and 5000)	Check fuse, wiring or replace blower.
A29 & P10 - Process Filter Clogged (Option) – The process filter differential pressure switch is tripped.	The process air filter is clogged.	Remove and clean or replace the process air filter.
A33 & P26 - Regeneration RTD Integrity – If the regeneration RTD is faulty, it shuts down the dryer.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections, make necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The regeneration RTD has failed.	Replace the regeneration RTD.
	The control board has failed.	Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A34 & P28 - Return Air Temperature RTD Integrity – The dryer continues to run with a passive alarm. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. *W1600-5000 dryers designed prior to August 2007,* the return air temperature is measured at the inlet to the process blower.)	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections, make necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The return air RTD has failed.	Replace the return air RTD.
	The control board has failed.	Replace the control board.
A35 & P8 - Regeneration Temperature Loop Break – The regeneration temperature is outside of the operator entered deviation alarm band (see Regeneration Temperature Deviation passive alarm) and the regeneration temperature is not moving towards the setpoint at a rate greater than specified. Default values are 2°F {1°C} over 40 seconds.	The regeneration heater has failed.	Check the heater fuses, and resistance across each leg of the process heater.
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.
	The regeneration blower is not running.	Correct the cause of the non-functioning blower.
	The output on the control board has failed or the fuse is blown.	Replace the control board or fuse.
A36 - Control Communications Watchdog - The display board has lost communications with the control board.	Plugs on wire harness between the display and control boards are loose or not wired correctly.	Make sure plugs are tight on board connections and match the wiring diagram.
	Display board or communications boards have failed.	Replace the defective boards.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A38 - Phase Error (Optional) - One of the three power wires is connected wrong.	One of the three power wires are out of phase.	Switch the position of two of the incoming lead power wires at the dryer.
	A fuse has blown.	Check and replace the fuse.
	Phase detection board has failed.	Replace the phase detection board.
	There is loose wiring between the phase board and the control board.	Make sure wires are correct and secure.
A39 - EEProm Write Error	Internal control board problem.	Replace the control board.
A48 & P22 - Aftercooler/Intercooler Loop Break (Optional) - Indicates return air temperature is not moving towards the setpoint when flow control option is installed.	No water to aftercooler/intercooler.	Turn on water supply.
		Ensure flow control valve is functioning properly.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A53 - Process Blower Overload - If the process blower exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down. ✎ **NOTE:** Once the overload has tripped you must wait 2 - 15 minutes with power on for it to reset automatically.	The process blower current draw has exceeded the full load amps rating of the motor.	Press alarm acknowledge and allow overload to automatically reset, then try to restart the dry. If the alarm condition occurs again have a qualified electrician check the current draw to the motor.
	The process blower has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the process blower for mechanical failure and free rotation. Replace if necessary. Allow overload to automatically reset, then try to restart the dryer.
	The process blower has failed electrically.	Disconnect and lock out main power. Check the process blower for electrical shorts or open circuits. Replace if necessary. Allow overload to automatically reset, then try to restart the dryer.
	Loss of phase of power to the motor starter.	Check for a blown fuse in the dryer or main power supply. Allow overload to automatically reset, then try to restart the dryer.
	The overload is set incorrectly.	Disconnect and lock out main power. Check the overload settings and confirm that the settings match the full load amps listed on the process blower motor. Allow overload to automatically reset, then try to restart the dryer.
	Overload is defective.	Replace the overload.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A55 & P31 - Wheel Rotation Failure - The regeneration temperature differential has been reached.	The wheel motor is not turning.	Check the motor, plugs, and fuses.
	The belt tensioner is loose or the belt is slipping.	Change or adjust the tensioner spring or replace the belt.
	The regeneration heater is not working.	Check the heater fuses and heater.
A56 & P32 - Regeneration Outlet RTD Integrity - The control can not sense the regeneration outlet RTD.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections, make necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The regeneration outlet RTD has failed.	Replace the regeneration outlet RTD.
	The control board has failed.	Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A57 - Regeneration Blower Overload - If the regeneration blower exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down. ✎ **NOTE:** Once the overload has tripped you must wait 2 - 15 minutes with power on for it to reset automatically.	The regeneration blower current draw has exceeded the full load amps rating of the motor.	Press alarm acknowledge and allow overload to reset automatically, then try to restart the dryer. If the alarm condition occurs again have a qualified electrician check the current draw to the motor.
	The regeneration blower has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the regeneration blower for mechanical failure and free rotation. Replace if necessary. Allow overload to reset automatically, then try to restart the dryer.
	The regeneration blower has failed electrically.	Disconnect and lock out main power. Check the regeneration blower for electrical shorts or open circuits. Replace if necessary. Allow overload to reset automatically, then try to restart the dryer.
	Loss of phase of power to the motor starter.	Check for a blown fuse in the dryer or main power supply.
	The overload is set incorrectly.	Disconnect and lock out main power. Check the overload settings and confirm that the settings match the full load amps listed on the process blower motor. Allow overload to reset automatically, then try to restart the dryer
	Overload is defective.	Replace the overload.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

Problem	Possible cause	Solution
A58 & P34 - Dewpoint Deviation High (Option) - Displayed when the actual dewpoint goes above the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 30 seconds.	Desiccant wheel not turning.	*See A55 & P31*
	The hose or wiring connections to the sensor block are loose or have fallen off.	Check wiring and hose connections to the sensor, resecure if needed.
	Poor regeneration air flow.	Remove the air flow restrictions, dirty filters, etc.
	The desiccant wheel may be contaminated.	Install plasticizer/volatile trap for severe situations.
		Replace the desiccant wheel. *See Troubleshooting section, entitled Replacing the desiccant wheel assembly.*
A 59 & P35 - Dewpoint Deviation Low (Option) - Displayed when the actual dewpoint goes below the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 30 seconds.	Leaks in the process air stream.	Check for worn or loose hoses.
	The dewpoint can not control to the desired setpoint.	Material and/or ambient condition may be too dry to increase the actual dewpoint. Please wait several hours to determine if the setpoint can be reached. Increase the dewpoint low deviation value.
	The dewpoint sensor has failed.	Replace the dewpoint sensor.

Additional Alarms

Along with the alarm indicators, you may encounter additional messages that indicate a problem within the control.

Problem	Possible cause	Solution
CoS Er.4 or Co5 Er. 4 - Displayed when the **"Start"** button is pushed during any active alarm. (Passive or Shutdown)	The dryer will continue to run if there is a passive alarm, however it will not start if there is a active alarm.	Push the alarm acknowledgement button to identify the alarm, and address it as necessary.
CoS Er.0 or Co5 Er.0 - Indicates there is a problem in the communication between the control board and the display board.	Loose or improperly connected wire.	Check wiring between control board and display board.
	Improper dip switch setup on control board.	Check dip switch setup on control board.
	Defective display board or control board.	Replace boards in sets to maintain software compatibility.
Err 004 - Indicates a mismatch of software between the display board and the control board.	The software revision of the display board and control board are not compatible.	In most cases, both display and control boards will need to be replace as a set.
Er. L - There is a problem in the sensor connection (RTD, dewpoint sensor, etc.) for the effected function.	Problem in the analog input section of the control.	Check that all jumpers are in their proper place. Check to see if the dewpoint sensor is connected properly. Disconnect the ribbon cable connecting any analog option boards to the main control board. If the display returns to normal for all values except those that are generated through the analog options boards, replace the option board.
	Defect in the main control board.	Replace main control board.

Additional Alarms

Along with the alarm indicators, you may encounter additional messages that indicate a problem within the control.

Problem	Possible cause	Solution
Er. H - There is a problem in the analog input section of the control.	RTD is not connected properly or is defective.	Check RTD connections, replace defective RTD
	Connector to all RTDs is removed.	
	The ribbon cable between an analog option board and the main control board is not connected properly.	Check connections between analog option board and the main control board.
	Problem in the analog input section of the control.	Disconnect the ribbon cable connecting any analog option boards to the main control board. If the display returns to normal for all values except those that are generated through the analog options boards, replace the option board.
	Defect in the main control board.	Replace main control board.

Dewpoint Troubleshooting

Under normal operating conditions, the dryer will produce dewpoints in the range of -40 to -20° F {-40 to -29° C}. However, you may experience situations that produce undesirable results.

Problem	Possible cause	Solution
Dryer not producing desired dewpoint.	Low regeneration air flow.	Check regeneration filter and clean and/or replace as necessary.
	Return air temperature exceeds 125°F {52°C}. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. On W1600-5000 dryers designed prior to August 2007, the return air temperature will be measured at the inlet to the process blower.)	Reduce the temperature of the cooling water or increase the flow. Connect water to the aftercooler/intercooler if not already connected. Check for adequate water temperature. Water temperature should be approximately 85°F {29°C}.
	Regeneration temperature is below normal setting.	Check amperage of regeneration heaters. Replace heaters if necessary. ⚠ **WARNING:** Any electrical checks should be performed by a qualified electrician.
	Leaks in process lines.	Check all hoses, gaskets, doors, loaders or other potential areas where leakage may occur. Replace any defective hoses or gaskets.
	Contaminated desiccant due to off-gassing, too long of a residence time or drying temperature is too high for the grade of material being processed.	Verify proper drying temperatures and residence times. If off-gassing is a condition of the material being processed, contact Conair Parts at (800) 458 1960 for the addition of a volatile trap.
	Analog option board/sensor malfunction	Verify dryer dewpoint readings with a calibrated portable dewpoint meter. Replace analog option board or sensor.

Poor Material Drying Troubleshooting

Occasionally, processing problems that are suspected of being caused by poor drying are eventually determined to be the result of other issues in the process setup. The information can assist you in determining if your drying system is performing properly. However, the only way to know definitely if your material is properly dried is to perform moisture analysis of small samples as it leaves the bottom of the hopper or just as it enters the process. Conair does not sell moisture-analyzing equipment, but there are many brands of this equipment available on the market.

✎ **NOTE:** Concerns with drying temperature may require review of HTC or ResinWorks controls.

You should also be aware that some processing problems may actually be the result of over-drying material. Most materials will degrade to some extent if they are exposed to their specified drying temperature for a time significantly longer than the residence time specified by the supplier. If you want to maintain its dryness, it is recommended that you reduce the process air temperature. If your Conair dryer is equipped with the Setback feature, you should familiarize yourself with it, and make use of it. If not, you may want to contact Conair to determine if it can be added to your dryer.

A majority of customer questions to Conair are related to dewpoint. It is important to realize that dewpoint is one of **four** requirements that need to be satisfied.

There are four requirements, listed in order of importance, necessary to properly dry hygroscopic plastic resins:

1. **Drying temperature** of the air entering the hopper must be at the proper drying temperature for your material, as specified by your material supplier.
2. **Residence time** is the time, determined by your material supplier, that the material in use must be heated to achieve proper drying temperature.
3. **Airflow** during the process drying circuit must be adequate to carry and distribute the heat throughout the entire bed of material inside the hopper.
4. **Dewpoint** of the process air must be low so it can efficiently collect the moisture as it is released from the heated material and carry it to the dryer to be removed in the desiccant.

Poor Material Drying Troubleshooting (continued)

✎ **NOTE:** Concerns with drying temperature may require review of HTC or ResinWorks controls.

Once it is determined which of the four requirements that is not being satisfied, refer to the following list of possible causes and solutions.

Temperature - The temperature of the air entering the hopper must be at the proper drying temperature for your material, as specified by your supplier.

Problem	Possible cause	Solution
The temperature of the air entering the hopper is not at proper drying temperature.	Incorrect setpoint	Refer to the drying specifications for your material and adjust the setpoint to the recommended setpoint. If your dryer has the Setback option, make sure it is not active unless you have specifically activated it. If necessary, refer to the Operation section of this manual for assistance in using the Setback function.
	Not able to achieve setpoint.	Replace any defective process heater, contactors, fuses, etc. Ensure the selected drying temperature is within the design specifications of your dryer.
	Inaccurate process temperature readout.	Ensure the Process RTD is properly positioned in the air stream. Determine if there is a problem in the temperature control circuit and repair or replace any defective components such as RTD, temperature control, circuit boards, etc.

Poor Material Drying Troubleshooting (continued)

Residence Time - The time your material supplier has determined that the material in use must be heated to its drying temperature to achieve proper drying.

Problem	Possible cause	Solution
Material residence time is too long or short.	Material level in hopper is too low.	Make sure there is an adequate supply of material to feed the loader on top of the drying hopper. Correct any problems with the conveying system that may be preventing your loader from filling the hopper. If your hopper has a level sensor for maintaining a material level less than completely full, be sure this sensor is adjusted properly.
	Material throughput is too high.	Take any necessary steps, such as slowing down the process, to ensure the material usage is within design specifications of the dryer and hopper.

Poor Material Drying Troubleshooting (continued)

Airflow - The airflow in the process drying circuit must be adequate to carry and distribute the heat throughout the entire bed of material inside the hopper. If the airflow is too low, the material in the center of the hopper may get heated fully to the drying temperature, but the material against the sidewalls will not. In most cases, the material 2/3 to 3/4 of the way toward the top of the hopper should be heated to the proper drying temperature.

Problem	Possible cause	Solution
Too much or too little airflow. ✎ **NOTE:** If there is too much airflow, the material may fluidize inside the hopper, resulting in inconsistent material flow through the hopper, which can negatively impact residence time.	Dirty process air filter.	Clean or replace the process filter.
	Collapsed hoses or holes/leaks in the hoses and hose connection.	Replace any worn or damaged hoses. Tighten all hose clamps to eliminate leaks.
	Airflow restrictions.	Remove any obstructions in the process air circuit.
	Process blower running backwards or performing poorly.	Verify the process blower is running in the correct direction. If backwards, reverse direction by switching any 2 legs of high voltage to the motor. ⚠ **WARNING:** Any electrical checks should be performed by a qualified electrician. Repair or replace motor.
	Material level in the hopper too low.	Other than running out of material to complete a job, the material level inside the hopper must be a minimum of 50% full. If the hopper is not at least half full, the material in the cone section will not get adequate airflow to dry properly.

Poor Material Drying Troubleshooting (continued)

Replacement dewpoint monitors are available from Conair.

Contact Conair Parts
(800) 458 1960
From outside of the United States, call:
(814) 437 6861

Dewpoint - The process air must be at a low dewpoint so it can efficiently collect the moisture as it is released from the heated material and carry it to the dryer to be removed in the desiccant. In most cases, the dryer will dry your material satisfactory if the dewpoint of the air is -20 to -40° F {-29 to -40° C}. If your dryer does not have a dewpoint readout, you can check the dewpoint with a portable dewpoint instrument. Conair sells a variety of portable dewpoint meters. Contact Conair Parts.

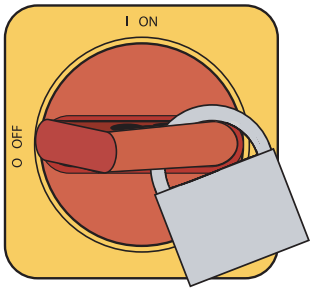
Problem	Possible cause	Solution
Dryer dewpoint is not reaching proper setpoint.	Low regeneration temperature.	Replace or check defective heaters, fuses etc.
	Poor regeneration airflow.	Clean or replace the regeneration filter.
		Ensure the regeneration blower is operating properly and rotating in the correct direction. *See Installation section entitled, Checking for proper airflow.*
		Remove obstructions in the air stream, such as crimped hoses, etc.
	High dewpoint, ambient air leaking into the closed loop drying circuit.	Replace damaged hoses and seal any leaks in the process air circuit.
		If using a vacuum loader on the hopper, ensure that the loader shroud is installed in the hopper and that the hopper is completely filled with material.
		If partially filling your hopper, ensure that the hopper loader is sealed against ambient air.
		Install a gasket between the loader and the top of the hopper.
	Return air temperature to the dryer is too high. (The return air temperature on W1600-5000 dryers is measured at the inlet to the desiccant wheel. *W1600-5000 dryers designed prior to August 2007,* the return air temperature is measured at the inlet to the process blower.)	Clean the aftercooler/intercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*
	Poor desiccant performance.	*See Troubleshooting section entitled, Replacing the desiccant wheel assembly.*

Replacing Fuses

1 **Disconnect and lockout the main power supply.**

2 **Open the electrical enclosure door.**

3 **Check the fuse with an ohmmeter.** If necessary, pull the fuse out and replace it with a fuse of the same type and rating.

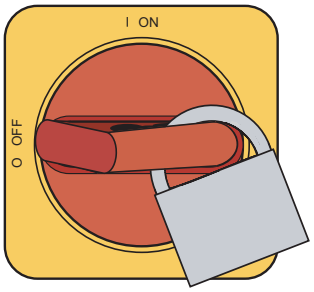


IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

Fuse Blocks

To locate the appropriate fuse and replacement part, refer to the wiring diagrams that came with your dryer.

Checking Heater Solid State Relays



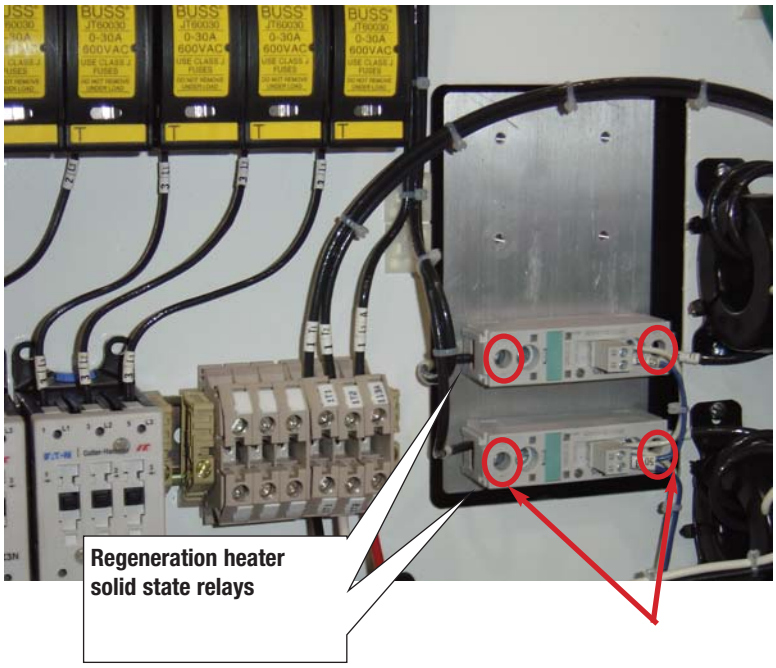
CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.

IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

1 **Disconnect and lockout the main power supply.**

2 **Open the electrical enclosure.**

3 **Locate the regeneration solid state relays.** Refer to the wiring diagrams that came with your dryer.



NOTE: Measure voltage using a voltmeter across the two high voltage connections of each relay. (Shown here circled in red.)

4 **Turn power on to the machine.**

5 **Start the dryer.**

6 **Measure voltage across the high voltage connections using a voltmeter.** When relay is energized, as indicated by the LED (green) voltage should be read 0 (zero). When relay is de-energized, LED off, full voltage should be measured across the relay. When relay is off, if voltage reads zero, relay is bad and needs replaced. Repeat this procedure for each relay.

Checking or Replacing Temperature Sensors

The Carousel Plus W Series Dryer uses RTD sensors to monitor the temperatures of the return air, air into the desiccant, the regeneration outlet, and the regeneration inlet.

To check or replace an RTD sensors:

1 **Disconnect and lockout the main power supply.**

2 **Remove dryer panels, as necessary.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*

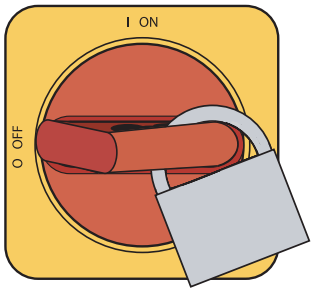
3 **Locate the RTD sensors.**

4 **Check the sensor positions and conditions.** Temperature readings will be incorrect, if the sensors are touching the wall of an air hose or pipe or if the sensor or wiring is damaged. The tip of the sensor should be centered within the air hose or pipe. Sensor wires should be attached to the appropriate connection points on the dryer's electrical enclosure or microprocessor board.

5 **To check with ohm meter,** measure the resistance across the RTDs. The resistance should be approximately 110 ohm at room temperature.

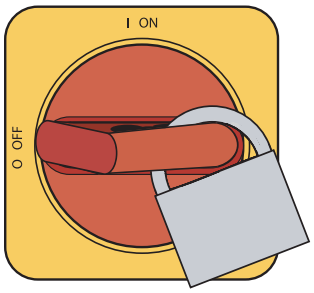
6 **Replace the sensor, if necessary.**

IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.



Replacing the Regeneration Heater

(W600 - 1000)



IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

1 **Stop the dryer, disconnect the power, and follow proper lockout procedures.**

2 **Remove the right side panel of the dryer**, as viewed from the front of the dryer, to gain access to the regeneration heater.

3 **Disconnect the regeneration heater power wires from the terminal block in the control cabinet.** Feed the regeneration power cable out of the control cabinet.

4 **Unplug the quick disconnect for the high temperature switch cable** at the switch.

5 **Loosen the hose clamps then remove the hoses** from the top and bottom of the regeneration heater tube. Remove and check the bottom heater hose for loose debris or fragments, these fragments can damage the newly installed heater if not removed.

6 **While supporting the heater tube, loosen the hose clamp supporting the regeneration tube to the mounting bracket,** then remove the heater tube from the dryer.

7 **Slide the insulation off the heater tube,** or make a cut the entire length of the insulation sleeve to aid removal.

Replacing the Regeneration Heater

(W600 - 1000) (continued)

8 **Compare the markings on the outside of the regeneration heater tube** to ensure the new one has the same voltage and kW ratings as the original heater tube. This information is on the end nearest the wires.

9 **Slide the original insulation over the new heater** or, if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with duct tape.

10 **Make sure the cable end of the heater tube is to the bottom then secure the new heater tube to the mounting bracket with a hose clamp.**

11 **Connect the hoses to the top and bottom of the heater tube** and secure them with hose clamps.

12 **Connect the high temperature switch wires** to the quick disconnects near the heater tube.

13 **Route the heater power cable into the control cabinet and connect the leads to the original locations on the terminal block.** Refer to the wiring diagram for specific connection information.

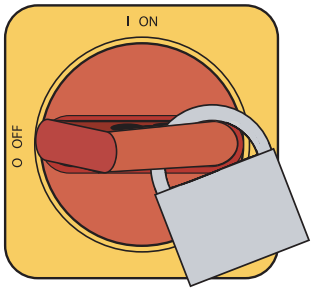
14 **Replace the side panel of the dryer.**

15 **Measure the resistance from each leg of the heater tube to the others and from each leg to ground.** There should be +/- 5% resistance variation between all 3 legs, and high resistance from each leg to ground.

16 **Connect the dryer to power and turn it on.** Verify that the regeneration temperature achieves the setpoint.

Replacing the Regeneration Heater

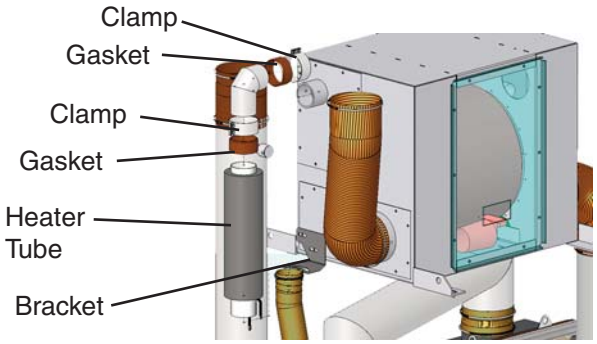
(W1600 - 2400)



IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

1 **Stop the dryer, disconnect and lockout the main power.**

2 **Locate the heater.** Open the side panels of the dryer locating the heater which is secured to the inlet of the desiccant wheel assembly by hard piping, brackets and clamps. *See Installation section entitled, Opening the dryer doors (W1600-5000).*



3 **Disconnect the main power leads at the junction box inside the frame of the dryer.**

4 **Disconnect the high temperature switch cable at the quick disconnect.**

5 **To remove the defective regeneration heater tube, loosen the pressure clamps at the top and bottom of the heater tube connection and slide the clamp and its silicon gasket back away from the heater tube. W1600-2400 model dryers lower clamp is attached to a bracket that is mounted to the desiccant wheel assembly, loosen clamp to remove it from the bracket.** Remove and check the bottom heater hose for loose debris or fragments, these fragments can damage the newly installed heater if not removed.

6 **Slide the insulation off the heater tube, or make a cut down the entire length of the insulation sleeve to aid removal.**

7 **Compare the markings on the outside of the regeneration heater tube to ensure the new one has the same voltage and kW ratings as the original heater tube.** This information is on the end nearest the wires.

(continued)

Replacing the Regeneration Heater

(W1600 - 2400) (continued)

8 **Slide the original insulation over the new heater,** or if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with heat tape.

9 **Make sure the cable end of the new heater tube is to the bottom, then connect the hoses to the top and bottom of the heater tube** and resecure with pressure clamps and the lower heater tube bracket that was removed in Step 5.

10 **Connect the high temperature switch cable to the quick disconnect.**

11 **Route the heater power wires into the junction box, and connect them to the supply leads from the control box.** Refer to the wiring diagram for specific connection information.

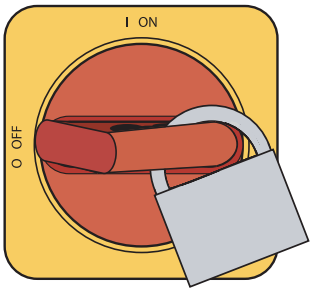
12 **To ensure all connections are correct, measure the resistance as in Step 3.** You should measure the readings as noted for a good heater.

13 **Close the side panel of the dryer.**

14 **Connect the dryer to power and turn it on.** Verify the regeneration temperature achieves the setpoint.

Replacing the Regeneration Heater

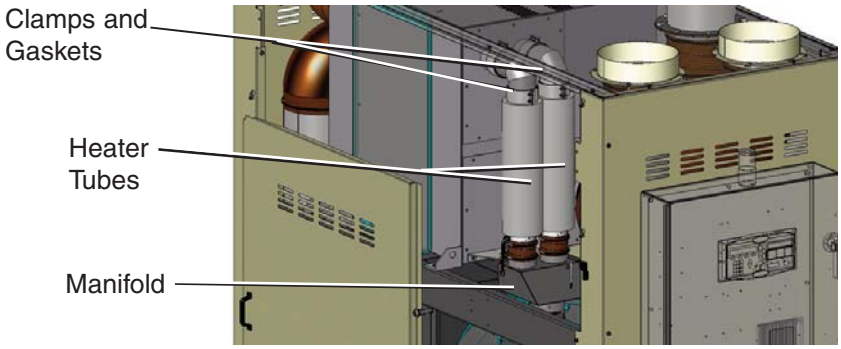
(W3200 - 5000)



IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

1 **Stop the dryer, disconnect and lockout the main power.**

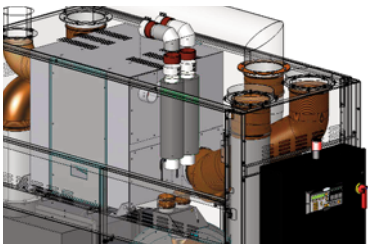
2 **Locate the heater(s).** Open the side panels of the dryer locating the heaters which are secured to the inlet of the desiccant wheel assembly by hard piping, a heater tube manifold, brackets and clamps. *See Installation section entitled, Opening the dryer doors (W1600-5000).*



3 **Disconnect the main power leads at the junction box inside the frame of the dryer.** In units with two heaters (W3200 and W5000), it may be necessary to measure resistance across the power leads of each heater tube to determine which heater needs to be replaced. In a good element, the resistance across all three legs should be +/- 5% resistance variation when measured leg-to-leg, and high resistance from each leg to ground. Readings other than this indicate a defective heater.

4 **Disconnect the high temperature switch cables at the quick disconnects.**

5 **Loosen the pressure clamps at the top and bottom of the heater tube connection and slide the clamp and its silicon gasket back and away from the heater tube to remove the defective regeneration heater tube(s). W3200-5000 model dryers lower heater clamp(s) are attached to a manifold that is secured to the desiccant wheel assembly with a bracket, loosen the clamp that secures the heater tube to the manifold to remove it from the dryer.**



(continued)

Replacing the Regeneration Heater

(W3200 - 5000) (continued)

6 **Loosen the two (2) lower clamps that secure the regeneration manifold and tubing to the desiccant wheel bracket.** Remove the regeneration manifold and the tubing that is attached to the bottom of the manifold. Then remove the tubing from the regeneration blower outlet and check for loose particles within the tubing, clean as necessary. Reverse this procedure to reinstall the regeneration manifold and tubing.

7 **Slide the insulation off the heater tube(s), or make a cut down the entire length of the insulation sleeve to aid removal.**

8 **Compare the markings on the outside of the regeneration heater tube to ensure the new one has the same voltage and kW ratings as the original heater tube.** This information is on the end nearest the wires.

9 **Slide the original insulation over the new heater,** or if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with heat tape.

10 **Make sure the cable end of the new heater tube is to the bottom, then reconnect the hoses to the top and bottom of the heater tube** and resecure with pressure clamps that were removed in Step 5.

11 **Connect the high temperature switch cable to the quick disconnect.**

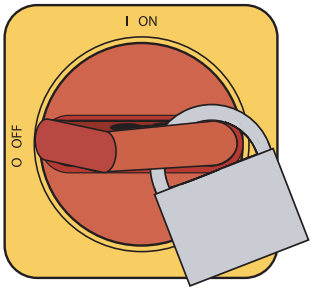
12 **Route the heater power wires into the junction box and connect them to the supply leads from the control box.** Refer to the wiring diagram for specific connection information.

13 **To ensure all connections are correct, measure the resistance as in Step 3.** You should measure the readings as noted for a good heater.

14 **Close the side panel of the dryer.**

15 **Connect the dryer to power and turn it on.** Verify the regeneration temperature achieves the setpoint.

Replacing the Desiccant Wheel Assembly (W600 - 1000)



When desiccant becomes clogged or contaminated, you should replace the desiccant wheel to ensure optimum performance.

1 **Stop the dryer, disconnect and lockout the main power.**

2 **Remove the upper and lower side panels from both sides of the dryer**.

3 **Remove the top cover from the dryer** by removing the securing bolts.

4 **Note the position of all the hoses, RTDs, and wiring connections then remove or disconnect** these from the desiccant wheel assembly.

5 If the dryer aftercooler is being used, **turn off the water supply to the aftercooler and disconnect the water lines** from the aftercooler.

6 **Remove the bolts securing the aftercooler assembly to the desiccant wheel assembly.**

7 **Remove the bolts securing the desiccant wheel assembly in the dryer frame.**

⚠ 8 **If the dryer aftercooler is being used, slide the desiccant wheel assembly towards the front of the dryer, being careful not to let it fall off the dryer frame.** Unbolt the aftercooler assembly from the back panel of the dryer and remove it.

9 Note the orientation of the desiccant wheel assembly. **Using an overhead crane or similar device, use the lifting rings provided and lift the desiccant wheel assembly out of the dryer.**

(continued)

Replacing the Desiccant Wheel Assembly (W600 - 1000) (continued)

10 **Lift the new desiccant wheel into the dryer frame, being sure it is oriented properly.** To verify the correct orientation, ensure that the regeneration air inlet is positioned closest to the regeneration heater tube. **DO NOT** bolt into place at this time.

11 If the dryer aftercooler is being used, **slide the desiccant wheel assembly towards the front of the dryer, being careful to not let it slip off one side of the dryer frame.** Position the aftercooler assembly into the dryer frame and bolt it to the rear panel.

12 **Position the desiccant wheel assembly and bolt it in place.**

13 **Bolt the aftercooler to the desiccant wheel assembly.**

14 **If the aftercooler is being used, reconnect the water lines.**

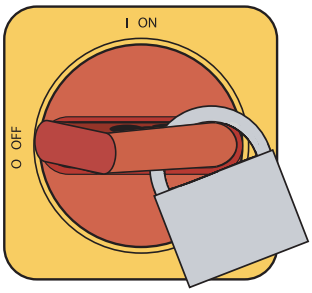
15 **Reconnect or reinstall all hoses, RTDs, and wiring connections.**

16 **Bolt the top cover in place.**

17 **Connect the power to the dryer and start it.** Ensure that the desiccant wheel assembly rotates in the correct direction.

18 **Replace all upper and lower side panels.**

Replacing the Desiccant Wheel Motor (W600 - 1000)



1 **Stop the dryer, disconnect and lockout the main power.**

2 **Remove both side panels.**

3 **Disconnect wiring to the motor.**

4 **Remove the pivot bolt securing the belt tensioner to the motor bracket.** Be sure to retain the flat washers located between the tensioner and bracket. Disconnect the spring and remove the tensioner.

5 **Remove the belt from the motor pulley,** then remove the pulley from the motor.

6 **Remove the screws securing the motor to the upper and lower bracket,** and remove the motor.

7 **Secure the new motor to the bracket.**

8 **Install the pulley on the new motor,** and position the belt on the pulley.

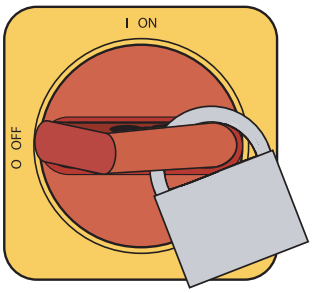
9 **Connect the spring to the tensioner, then secure the tensioner to the motor bracket.** Be sure to install flat washers between the motor bracket and the tensioner.

10 **Connect the wires to the motor.**

11 **Connect the power to the dryer.** Turn the dryer on and ensure that the desiccant wheel is rotating in the correct direction.

12 **Replace the side panels.**

Replacing the Desiccant Wheel Motor (W 1600 - 5000)



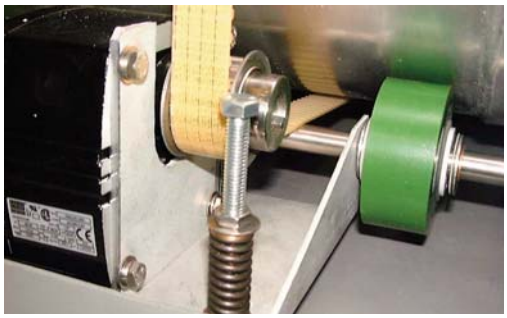
1 **Stop the dryer, disconnect and lockout the main power.**

2 **Open the right side panel(s), as viewed from the front of the dryer.**
See Installation section entitled, Opening the dryer doors (W1600-5000).

3 **Unbolt and remove the access panel on the side of the desiccant wheel assembly.**

4 **Disconnect the wiring connection to the motor.**

5 **While noting the number of turns, relieve the tension on the drive bolt** by loosening the nut above the tension spring until the belt can be slipped off the motor sprocket.



6 **Unbolt the motor and remove it from its mounting bracket.**

7 **Remove the sprocket from the old motor, and install it onto the new motor.**

8 **Bolt the new motor in place.** Be sure to remove the plastic plug in the vent hole of the gearbox.

(continued)

Replacing the Desiccant Wheel Motor (W1600 - 5000) (continued)

9 **Slip the belt onto the sprocket,** and adjust the tension spring nut to its original position.

10 **Connect the wires to the new motor.**

11 **With the access panel still removed, connect the power to the dryer and start it. Ensure the wheel turns in the correct direction.** If the belt appears to be slipping, it may be necessary to increase the tension on the drive belt slightly. Do not increase this tension any more than necessary to allow the wheel to rotate without slipping.

12 **Bolt the access panel in place** and close the side panel(s) on the dryer.

We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee. Most manuals can be downloaded free of charge from the product section of the Conair website.
www.conairgroup.com

How to Contact Customer Service

To contact Customer Service personnel, call:

✎ **NOTE:** Normal operating hours are 8:00 am - 5:00 pm. After hours emergency service is available at the same phone number.

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- ❒ Make sure you have all model, control type and serial numbers from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you..
- ❒ Make sure power is supplied to the equipment.
- ❒ Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- ❒ Check the troubleshooting guide of this manual for a solution.
- ❒ Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- ❒ Check that the equipment has been operated as described in this manual.
- ❒ Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

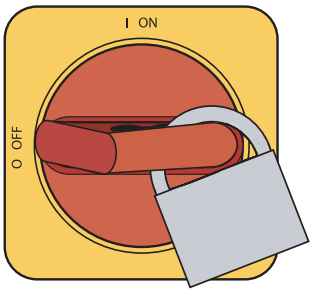
- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

Cleaning the Precooler Coils



You need to clean the precooler coils to keep them working efficiently. Cleaning frequency depends on the type and amount of material you process.

1 **Stop the dryer and lockout the main power.**

2 **Turn off the water flow to the water supply line.** Disconnect supply and return lines.

✎ **NOTE:** If an optional flow control was added with the precooler, remove the compression fitting from the precooler inlet. Loosen the fitting on the flow control, then swing the copper water supply tube out and away from the precooler inlet.

3 **Remove the bolts securing the precooler cover.** Remove the cover.

4 **Remove the precooler by pulling it out** of the precooler housing.

5 **Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.

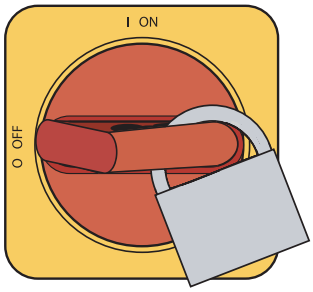
✎ **NOTE:** In cases of heavy volatiles, steam cleaning or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

6 **Inspect the condition of the gasket.** If it is damaged, replace the gasket.

7 **Reassemble** by repeating the steps in reverse order.

8 **Connect the water supply line to the inlet.** If a manual shut off valve is used, it should be mounted on the inlet line as well.

9 **Connect the outlet of the precooler to the inlet of the flow control valve** using the pre-shaped copper tubing and compression fittings provided.



Cleaning the Volatile Trap on the Demister (W600 - 1000)

1 **Stop the dryer and lockout the main power.**

2 **Remove the thumbscrews then remove the volatile demister cover.**

3 **Remove the demister by pulling it out from the housing.**

4 **Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.

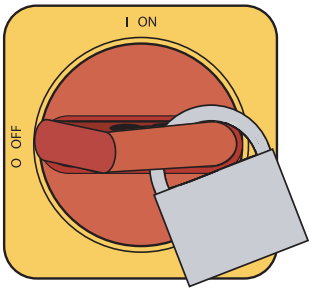
NOTE: In cases of heavy volatiles, steam cleaning or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

5 **Insert the demister carefully back into the housing, making sure to completely push it towards the back of its housing.**

6 **Inspect the condition of the gasket.** If it is damaged, replace the gasket.

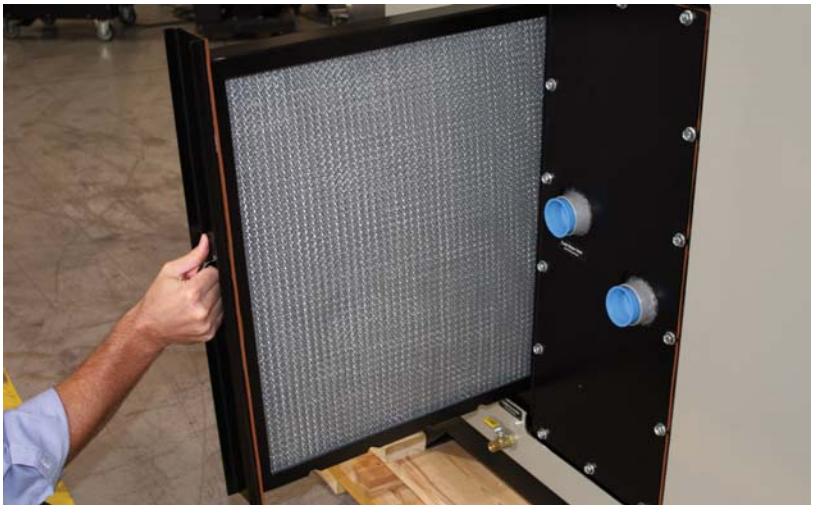
7 **Secure the cover in place using the original thumbscrews.**

Cleaning the Volatile Trap on the Demister (W1600 -5000)



1 **Stop the dryer and lockout the main power.**

2 **Remove the thumbscrews then remove the volatile demister carriage and demister from its housing.**



3 **Remove the demister from the demister carriage by pushing it out towards the right side of the carriage.**

4 **Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.

NOTE: In cases of heavy volatiles, steam cleaning or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

5 **Insert the demister carefully back into the demister carriage and then replace the entire assembly back into the demister housing.**

6 **Inspect the condition of the gasket.** If it is damaged, replace the gasket.

7 **Secure the cover in place using the original thumbscrews.**